



IN ARGENTINA.

One hundred and sixty-two miles southwest of Buenos Aires.

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF ANIMAL INDUSTRY—Bulletin No. 48.

D. E. SALMON, D. V. M., Chief of Bureau.

THE
ANIMAL INDUSTRY OF ARGENTINA.

BY

FRANK W. BICKNELL,

Special Agent and Agricultural Explorer.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.

1903.

LETTER OF TRANSMITTAL

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
Washington, D. C., July 8, 1903.

SIR: I have the honor to transmit herewith the manuscript of a paper entitled "The Animal Industry of Argentina," by Frank W. Bicknell, special agent and agricultural explorer.

Mr. Bicknell shows the status of the animal industry of Argentina at this time, and dwells upon the prospects of that Republic as a market for purebred animals from the United States. Some excellent photographs of the cattle, sheep, and horses now being produced in that country accompany the paper.

The subject-matter of this paper is such as will go far toward answering the many requests that come to the Department of Agriculture for information regarding the animal industry of Argentina, and I recommend that it be published as a bulletin of the Bureau of Animal Industry series.

Respectfully,

D. E. SALMON, *Chief of Bureau.*

Hon. JAMES WILSON, *Secretary.*

CONTENTS.

	Page.
Introduction	7
The Argentine Rural Society	8
The great annual stock show	12
The annual sales of breeding stock	14
The herdbooks and flockbooks of Argentina	21
What Argentine breeders want	23
Preference for Shorthorns	24
Demand for cows	25
Other breeds	26
Profits of importers	27
High prices for ordinary animals	29
Fat-stock and horse show	30
Kind of cattle for export and home consumption	31
Argentine steers are grass or alfalfa fed	32
The manufacture of tasajo declining	33
Meat supply of Buenos Aires	33
Shortage of cows in Argentina	35
Sales of horses in Argentina	36
Sales of sheep in Argentina	37
Animal sanitary regulations	37
Conditions and cost of admission of breeding stock	41
The dairy industry	43
Selection of cows for milking qualities	47
Test of dairy cows	48
Sacrifice of cows	50
Statistics of production and capacity	50
Cheese business not satisfactory	52
Experiments in comparison of breeds	53
How cows are fed	54
Carrying capacity of pastures	55
Advice of an Argentine packer	56
Live-stock census	57
Exportation of live stock	58
Health of live stock	59
The sheep business	61
The evolution of the sheep-breeding industry in Argentina	64
Argentine resources shown by exports	68
Principal exports for five years	70
Exports in detail	70
Distribution of exports	71

ILLUSTRATIONS.

	Page.
FRONTISPIECE. In Argentina.	
PLATE I. Lord Wenlock, first-prize 3½-year-old Shorthorn bull.....	8
II. Ladas 6th, first-prize 2½-year-old Shorthorn bull	8
III. Farrier Bridekirke, first-prize 2-year-old Shorthorn bull	16
IV. Calomel 16, first-prize 3-year-old Shorthorn cow	16
V. Grandison 42, prize champion Hereford, 3½ years old.....	16
VI. First-prize Clydesdale stallion	32
VII. First-prize Shire stallion.....	32
VIII. Docil, Percheron stallion, 3½ years old.....	32
IX. DeWet, first-prize Holstein bull, 22 months old	48
X. Best cow of Flemish group, winning championship in dairy test....	48
XI. Grade Shorthorn bulls, 2½ years old	56
XII. Holstein cows and calves	56
XIII. Fig. 1, first-prize yearling Lincoln sheep; fig. 2, first-prize Hampshire Down ram	64
XIV. Second-prize Rambouillets, 18 months old.....	64
XV. Hampshire Down rams, 3 months old	64

ARGENTINE TERMS AND MEASURES USED.

Money.—Unless otherwise stated, all expressions of value used herein refer to Argentine paper money, which will cost the foreigner to-day (May, 1903) 44 cents of United States money for the peso (dollar). The valuations in the custom-house, in which the amounts of imports and exports are stated, are in Argentine gold, worth 96.5 United States money for the peso.

Metric ton, used in the customs statistics.—2,204.62 pounds.

Kilo.—2.2046 pounds.

Liter.—1.0567 quarts, or 0.264 gallon.

Hectoliter.—2.837 bushels, dry measure, or 26.417 gallons, liquid measure.

Hectare of land.—2.47 acres.

Square of land.—4.17 acres.

League of land.—6,672 acres.

Meter.—39.37 inches.

Kilometer.—0.621 mile.

Estancia.—A stock farm, generally very large, where breeding steers and wethers for market, and sometimes also breeding purebred animals for sale as breeding animals, are carried on.

Estanciero.—The man who owns an estancia.

Cabaña.—An establishment where breeding animals are raised for sale.

Cabañero.—The man who owns a cabaña.

Camp.—The term generally applied to the country, the rural part, derived, no doubt, from the Spanish word “campo,” meaning the country. People in town say “I am going to the camp,” instead of saying “I am going to the country.”

Inside camp.—The better and more cultivated and favorably situated land and pastures; usually applied to the better portions of the province of Buenos Aires.

Outside camp.—The more distant, less fertile, dryer and less valuable part of the grazing country.

Mestizo.—Graded animals—partly pure-blooded, of any sort.

Novillos.—Steers.

Embarcadero.—The yards and sheds in the port of Buenos Aires where imported animals are received and where export animals are inspected and dispatched on board ship.

Frigorífico.—Frozen-meat establishment.

Lechería.—Either a milk depot in the city for the sale of milk at retail or the establishment of a milk dealer in the country.

Puchero.—The national dish, especially for the poorer classes. It consists generally of beef, potatoes, and whatever other vegetables may be had. It is all boiled together in one dish and is served in the same manner, requiring few dishes. Some kind of squash is a favorite addition and sometimes chicken is added or substituted for beef. Occasionally a little pork is put in. If good meat is used and it is well cooked and not too much water used, it is very palatable and nourishing. The better families make it with chicken, well flavored, and the chicken and vegetables are served separately.

Chacarero.—A farmer—a man who tills the land and raises a crop on a chacra, or farm.

THE ANIMAL INDUSTRY OF ARGENTINA.

By FRANK W. BICKNELL,
Special Agent and Agricultural Explorer.

INTRODUCTION.

The Argentine Republic is not to be studied hastily if reliable information is expected. Many mistaken ideas of the country have been promulgated by those who have spoken or written from imperfect knowledge or from hasty surface observations. It is difficult to obtain complete or accurate information regarding any resource or industry. Neither Government officials nor the people engaged in any kind of business have collected and published complete and exact reports concerning what is being done or may be done in the country. One can never be sure to what extent statistics have been "estimated," and the operation of comparing and analyzing a part of these reports is likely to reveal flaws that raise doubts as to the reliability of the whole. So the independent investigator, desiring to prove all things—to take nothing for granted and to state nothing of which he is himself in doubt—must get as many facts, estimates, and opinions as possible, and then, adding his own observations and knowledge, be prepared to judge of the value of what he has heard and read and to form his own conclusions. This is the policy which was adopted by the writer in his investigations in Argentina during parts of the years 1902 and 1903—something over a year altogether. This brief account of some phases of the live-stock industry in the great, rich Republic of the south is conservative rather than enthusiastic, and the statements made herein have been carefully verified.

The first object of this inquiry was to determine whether or not the breeders of pure-blooded stock in the United States could sell animals in Argentina. That question may be answered positively in the affirmative, providing the conditions here set forth are studied and observed and only first-class animals are sent to the Argentine sales. If some good Shorthorn bulls and cows could arrive in Buenos Aires from about the 1st to the 20th of August, so they could pass the required forty days in quarantine and be ready to be shown at the time of the great annual stock show and sales in the latter part of

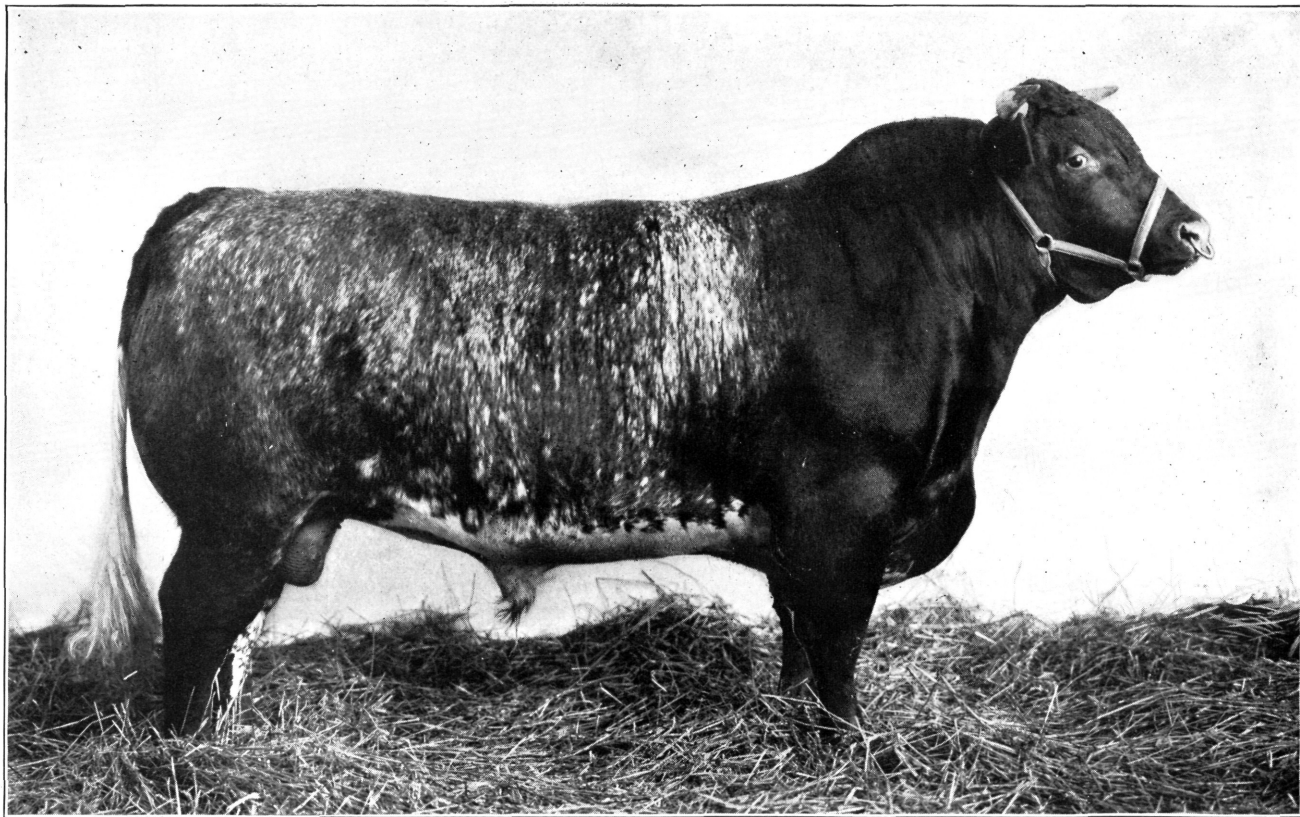
September and the first of October, there is little doubt that the returns would be quite satisfactory to those who sent them.

Because this country is a long distance from the United States and the people strange to us, we should not be frightened and hesitate to reach out for a business that is so simple and that has earned such handsome profits for others. There is nothing to fear in taking stock to Argentina to sell if the animals are right. They should without fail be tested for tuberculosis before leaving home, for they will be subjected to the tuberculin test there at the end of the forty days' quarantine, and, if they react, showing that they have the disease, they will have to be slaughtered or removed from the country immediately. The English breeders who send animals to Argentina do not generally do this. Our Government certificate showing freedom from tuberculosis would therefore add to the value of the animals.

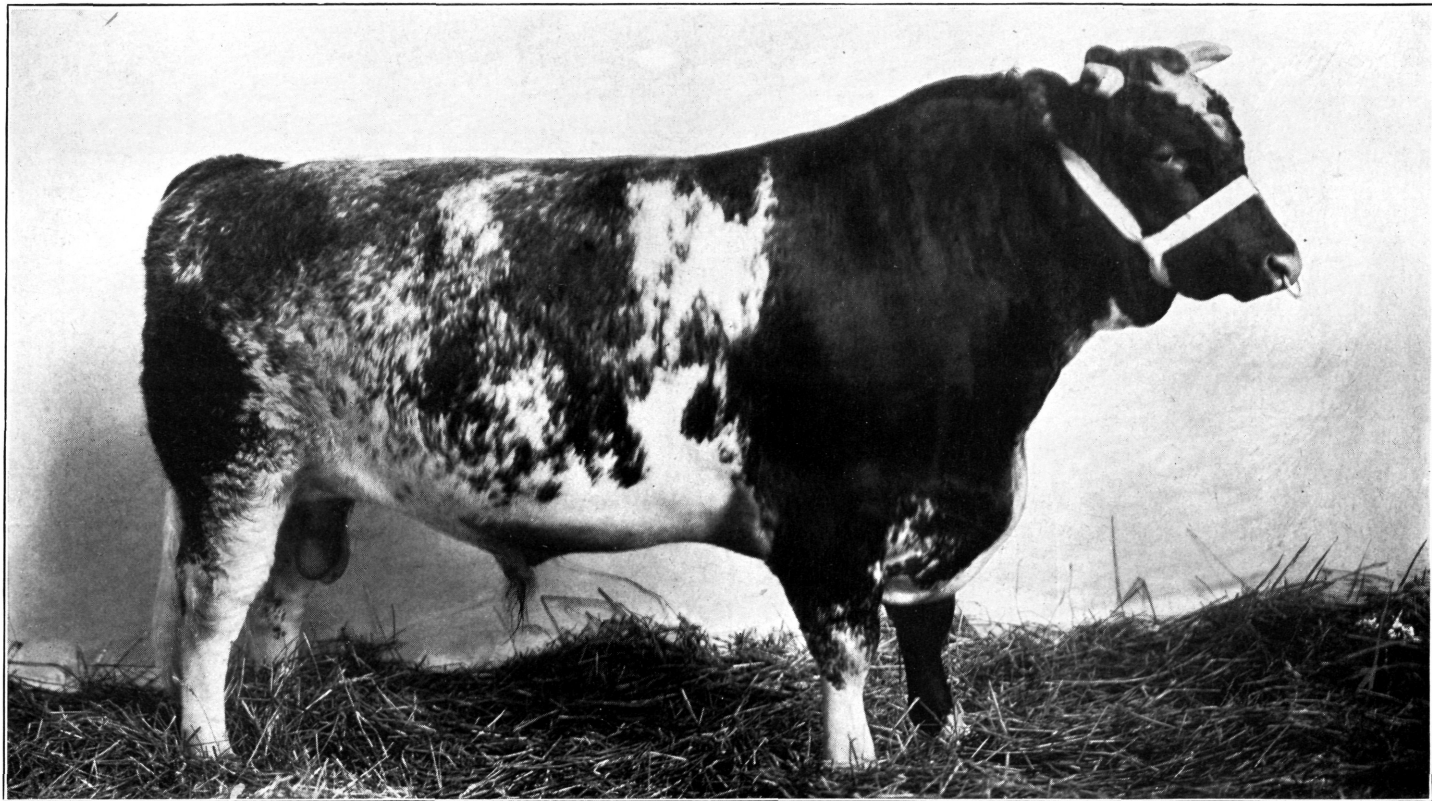
There is no prejudice against any North American in Argentina that is worth taking into consideration in any business enterprise. Any man from the United States who has something to sell that pleases the people there will be well received, and he has as good a chance to sell it as any other man from any other country, providing that he knows the conditions as well as the other man and conforms to them. These things he must learn. To sell breeding stock he will have no trouble if the animals are the right sort, for good breeding stock is keenly sought after, and the supply is inadequate. The Argentines would be very glad to see us enter more into competition with the English and others in respect of their trade, and we may do so very profitably and safely if we study the conditions and observe them in what we do. The writer met with a very cordial reception among Argentines, and has to acknowledge many courtesies. He found them, as well as the English farmers and stock raisers, who are very strong there, always willing to give information. They show a lively interest in us and admiration for our development.

THE ARGENTINE RURAL SOCIETY.

The first Argentine Rural Society (Sociedad Rural Argentino), the progenitor of the present organization bearing that name, had its origin in 1857. The prime mover in putting the idea into effect has told the writer the story of the inception and development of this, probably the most important, organization in Argentina. Like many other good things in Argentina, it had its inception in England. Don Eduardo Olivera, then a student in London, attending the lectures of John Nesbit on agricultural chemistry, noticed in a Buenos Aires newspaper an article by Domingo Faustino Sarmiento, afterwards President of the Republic and also the man who introduced the North American teachers to Argentina, commending a letter the young



LORD WENLOCK, FIRST-PRIZE 3½-YEAR-OLD SHORTHORN BULL. SOLD FOR \$6,000.



LADAS 6TH, FIRST-PRIZE 2½-YEAR-OLD SHORTHORN BULL, AND CHAMPION OF SHORTHORNS. SOLD FOR \$10,300.

man had written to his father describing the agricultural show in Birmingham. The Argentines were advised to avail themselves of the benefits of like organizations, and this led to the organization the following year of the first agricultural show in the country—a very small affair, under the presidency of Gervasio A. Posadas. During the show a meeting of *estancieros*^a was held and a committee named to form a rural society. This committee consisted of Señores Posadas, Sarmiento, Olivera, Favier, and Clark. But civil war came on, and the committee never met. It was not until July, 1866, that fourteen breeders met in Buenos Aires and organized the present Rural Society. The provisional committee was José Martinez de Hoz, Eduardo Olivera, and Ramon Viton. The rules and plan for the society, which had been prepared in 1858 by Señor Olivera, were the basis of the permanent organization, which was perfected a month later (August, 1866) with forty-seven members. The chief objects of the society, as then set forth, were the following:

(1) To promote by all possible means the improvement of our stock in a rational way, based upon scientific experience.

(2) To study the best means of irrigating our dry camps, as well as to drain swamps.

(3) To promote the morality and well-being of our camp population.

(4) To study the best breeds of cattle and sheep abroad, with the purpose of improving, by importation of breeding animals, the stock we now possess.

(5) To search for and study scientific methods adapted to the conditions of our country and calculated to increase our agricultural output.

(6) To secure commercial relations with foreign countries, in order to exchange produce and create a market for ours abroad.

To assist in carrying out these purposes, it was deemed necessary to secure rational teaching of agriculture and to establish an agricultural museum to display national products, soils, etc., and also foreign produce of a similar nature, to serve as models. Practical tests of the most improved machinery were provided for. The museum was founded under the presidency of Señor Olivera, and later has been reorganized as the Industrial Club, its scope greatly enlarged, and made a very important factor in the industrial development of the country, maintaining, as it does, a permanent exposition of national products in Buenos Aires.

The first pretentious show of the Rural Society was held in Palermo, a suburb of Buenos Aires, in 1875. The officers and their friends—those personally engaged in the venture—had great difficulty in getting any animals to exhibit. Very few seemed to take much interest in the show. Only 18 cattle, 19 sheep, and 19 horses were exhibited. In fact, it was not until 1895 that the show assumed national and noteworthy importance. Its development since then has been rapid, steady, and sure, except as regards sheep, with which there have been

^a See page 5 for explanation of this and other terms.

fluctuations. The following comparison of the number of animals exhibited since 1895 shows the development of the exposition:

Number of cattle, horses, and sheep, and value of sales at the expositions of the Rural Society, 1895 to 1902.

Year.	Cattle.	Horses.	Sheep.	Sales.
1895.....	253	84	531	\$130,000
1896.....	497	91	1,783	300,000
1897.....	654	116	2,080	335,000
1898.....	942	245	1,157	660,000
1899.....	1,487	191	2,204	880,000
1900.....	1,736	271	2,068	975,000
1901.....	1,881	249	1,800	916,000
1902.....	2,068	314	1,718	1,291,797

Besides these, other sales are held every year, at various other fairs in other parts of the country, usually in August, September, and October. Last year an exposition similar to the one in Buenos Aires was held in Rosario, and, for the first effort, was remarkably successful. The sales were small, because at that time the crop outlook was very uncertain; pastures had suffered from frost and drought in the country tributary to that show, and estancieros were avoiding every possible expenditure. The rains came and the prospect brightened very much, however, before the Palermo show in Buenos Aires was held; so the sales there were good.

Various fairs are held in the province of Buenos Aires, some of them under the auspices of societies and some by auctioneers for the sale of live stock—both breeding stock and stock cattle, fattened or to be fattened, and sheep. Then, there are the sales held in the auction houses in Buenos Aires, which are very important to breeders, for here are brought together representatives of the best herds and flocks in the country and also the best imported animals. This year all the imported animals, which are already arriving from England, will be sold in these great auction marts.

The next show, to be held in September and October, 1903, will be a national show, where only those animals bred in the country will be admitted, either for exhibition or sale, unless owned by Argentines at the present time (May, 1903). All imported stock will therefore be sold in the auction marts in the city. Next year (1904) the show will probably be international, foreign-bred animals being admitted. Both before and after the show, every year, sales are in progress in these marts. Two of them are a block in depth, opening on two streets in the business center and have large, airy, clean stalls and auction rings, where the animals are well cared for and shown to the best advantage. Sales of rams are held here at the time of the September-October show, and again in January, and then, beginning in March, for

several weeks. In January of this year 383 rams were sold in one sale. The September-October sales are always best, however. Nearly all kinds of live stock are sold at auction in this country.

Until the organization of the national department of agriculture, about four years ago, the Rural Society exerted a tremendous influence upon legislation and all regulations affecting the stock and agricultural interests, especially the former. It is composed mostly of wealthy and influential men, most of whom live at least a large part of the year in the city of Buenos Aires. They are owners of hundreds of thousands of acres of the best land in the Republic and are chiefly interested in stock raising. The influence of the Rural Society is still very great, and it is extending its usefulness by trying to interest and benefit the agricultural class, even the small colonist. The first agricultural show proper was held in May of this year, and it was the aim of the management to make it similar to our great agricultural fairs. For a number of years the society has held a show at this time for the exhibition of fat stock and horses only.

The Rural Society affiliates to a certain extent with similar organizations in other provinces, and a delegate is appointed to represent the Rural Society in each of these. There are eight of these provincial societies, most of which publish monthly bulletins, and several local or district societies in the province of Buenos Aires that hold local fairs and sales.

They are beginning to learn in Argentina what their big fertile country can do for them, and where and how to make the best of it. They lack agricultural literature and periodicals, such as we have, because the scientific study of agriculture is only just beginning, and because the farmers (called *chacareros*, as distinguished from *estancieros*, or stock raisers), the men who are raising crops, are mostly foreigners, many of them unable and unwilling to read. Of course, there are many proprietors (owners of land on a large scale) and a few small farmers who are eager for the best information to be had. For the benefit of these the Rural Society publishes a monthly review, or bulletin, of 60 to 100 pages, containing the best information obtainable regarding agricultural and stock-raising matters, with market conditions the world over, and such statistical information as may be had. The Rural Society in Rosario also publishes a monthly bulletin, and so do some of the other rural societies. The ministry of agriculture publishes, besides numerous special bulletins and reports, a semi-monthly bulletin covering the whole field of agriculture, stock raising, forestry, etc., which is quite exhaustive. The newspapers give considerable attention to live stock and agriculture. One English daily has a page on Sunday given wholly to these subjects. The English *estancieros* have done much for the country by adopting improved methods, and they are all students of agricultural and live-stock litera-

ture. Periodicals and books, and especially the publications of the United States Department of Agriculture, are eagerly seized upon by the energetic, progressive English, and by many native Argentines of Latin blood who have learned English and desire to profit by our experience and study.

THE GREAT ANNUAL STOCK SHOW.

All Argentine breeders, or at least 95 per cent of them, look forward to the annual show of breeding stock, given by the Argentine Rural Society in September and October in Buenos Aires, as the time when they will sell the animals they have raised for other breeders or for estancieros and secure new blood for their herds. The show is a great national stock exchange, where the breeders bring what they have to offer and come to see what others have done, and the estancieros, the producers of beef and mutton and wool and horses, come to buy "reproductores" to supply their large needs; so there are buyers for all classes of animals. The cabañero, or breeder of pedigreed animals, looks only for the best, and is willing to pay fancy and practically unlimited prices for animals that meet his ideas of perfection. The estanciero, or producer of beef, mutton, and wool, looks only, as a rule, for animals of individual merit for his own use in the camp, and he does not care for pedigree. He is contented with a grade bull that he can buy at \$200 to \$1,000. The same is true of the sheep and horses shown in the exposition, as it will be noticed that many well-bred mestizos, or graded animals, sold for good prices in cattle and sheep and poor prices in horses.

The opening of the fair is a gala occasion. The President of the Republic always attends and the minister of agriculture delivers an address, as well as the president of the society. The speech of the latter, made at the opening of the exposition in September, 1902, contained some rather remarkable suggestions, as he is a firm friend of England, and has been much gratified by having been made an honorary member of the Royal Agricultural Society of Great Britain. This gentleman, Dr. E. Ramos Mexia, was formerly minister of agriculture and a member of the Argentine Congress, where he advocated the passage of a law requiring the modification of the tuberculin test of cattle for tuberculosis, in that animals not far advanced in the disease should not be slaughtered on arrival in the country, but should be branded so they could be known and kept apart from others. But this proposition was defeated and the disposition of animals found to be affected with tuberculosis under the tuberculin test was left, in the order putting the law into effect, to the determination of the executive. This decree orders the destruction of the animals or their immediate shipment out of the country. Dr. Ramos Mexia has published a pamphlet on the subject in the English language, in which he gives

his speeches in Congress sustaining his contentions. The work is dedicated to the Royal Agricultural Society of England.

After the first week of the fair much of the best stock is removed. The attendance is not large at any time—only a few hundred men being present, except on a few afternoons, when the ladies come. The show has been and is yet, to a large extent, for rich men—those doing business on a large scale. The small farmers and stock raisers do not come to see it. It is in no sense a fair like our great State fairs. This year they are organizing for the first time an agricultural fair, to be combined with the fat-stock show this month (May, 1903), in which they hope to interest a greater number of small proprietors. The admission fee at the exposition is at first \$2 and is gradually reduced to 50 cents during the second week.

The visitor, fresh from the United States, with indefinite ideas about "the wild cattle on the pampas of the Argentine Republic" is astonished to land here, pass through this great, modern, healthy city of 876,000 people, past its beautiful, well-kept parks to the well-equipped and admirably arranged grounds of the Argentine Rural Society, and there find the greatest collection of purebred cattle and sheep that he ever saw. The grounds are beautiful, and the buildings and stalls for animals are very well arranged and spacious. The location is in a suburb of the city called Palermo, near the finest park in the city.

The new feature of this year's show was the dairy exhibit, the first one the society has given. This was demanded by the lively interest in that industry now being manifested in the country, and this exhibit attracted more attention from the people than any other part of the show. A very large building was supplied with power, and all sorts of dairy machinery was shown in operation. The United States was not well represented in this exhibit, but our manufacturers might do well there.

Very little interest is taken in hogs in Argentina, as their absence from the exposition shows. It is quite safe to predict that some day pork will be one of the chief sources of Argentine wealth, but at present the business of hog raising is out of favor, though the products of the hog, when properly prepared, bring high prices. The chief obstacle seems to be the lack of a reliable market at this time for a large production, and the high taxes and great amount of inspection that accompany the marketing of pork. Argentina once had a good market in Brazil, but that was lost by the degeneration of the pork owing to the feeding of pigs on decayed animals and other offal. When the system of feeding corn to animals is adopted, and large packing houses assure producers of a steady market, the hog business will come up in Argentina, for there appears to be no good reason why it should not.

The work of the judges in this exposition is generally done before the show opens. This is always the practice in the fat-stock show in May.

THE ANNUAL SALES OF BREEDING STOCK.

The most significant feature of the stock show in September was the sale of the animals brought there for that purpose; for that, undoubtedly, is the vital thing in the whole enterprise—that which gives it such an attraction for breeders and meat producers. Not an imported animal was sold in the show, and only a few just before. These few were an installment that had been brought from the United States about two years before, and, having left New York the day after the Argentine ports were closed to the United States, were prohibited from entering the country until this time. They were chiefly of Scotch blood and most of them had been imported into the United States and Canada. The highest price got by any of them was \$7,400 for a roan $3\frac{1}{2}$ years old. Others sold for \$4,900, \$4,500, \$3,500, \$4,450, and so on. One bull, a Cruikshank $4\frac{1}{2}$ years old, was from Danvers, Ill. His age was against him, as it was with all this lot, and he had a bad knee. He has not been sold and is on an estancia owned by the importer. There is no profit in bringing bulls here over 30 months old, and 24 months or thereabouts is better.

In this show in September and October 1,402 cattle, 199 horses, and 924 sheep were sold. The numbers of each exhibited were: Cattle, 2,068; horses, 314, and sheep, 1,718. Six pigs and 31 representatives of the poultry yard were sold, the pigs averaging about \$45 each and the poultry \$11.

The prices for breeding cattle were generally better than ever before, owing to the lack of any imported stock and to the prosperous outlook for the stock interests and for the country generally. The prices obtained for ordinary camp bulls—not eligible to registration in the herdbook, from grade cows wholly without pedigree—were the most astonishing. These were shown in open pens in lots of from 4 to 10 animals, generally about 8. Of the Shorthorns there were 74 lots, comprising 542 animals, that sold for \$214,514, or an average of \$395.78. This is equivalent to about \$174 United States money. Twelve of these animals sold for more than \$1,000 each, the highest being \$1,500. Many brought from \$600 to \$950, and the lowest price was \$70, and this for only a few animals. The Shorthorn heifers of the same class did not sell so well, for they were inferior animals. Somewhat over 300 of them were shown, of which 157 were sold at an average of \$216.65, the highest being \$850 and the lowest \$40. These heifers were not considered good animals, or they would have brought good prices. The best heifers are rarely offered at public sale. Comparatively few breeders have cows or heifers to sell, or at least they

do not offer the best of these as they do with their bulls. They keep the heifers for their own use as a rule and sell only the least desirable animals. Breeders are keenly on the lookout for good cows and heifers, and if any are for sale some one in the neighborhood is likely to buy them privately, saving the owner the trouble and expense of taking them to market to be sold at auction. These conditions explain the rather indifferent quality, the comparatively low prices, and small numbers of cows and heifers at the annual stock show.

Taking the prize-winning animals as they come, according to age, we may learn something of the preferences of Argentine breeders and the prices they are willing to pay. It should be remembered that these prices for native bulls were higher than ever before because of the fact stated above that there had been no importations of any consequence for eighteen months.

SHORTHORN BULLS.

Born March 1 to December 31, 1899: (1) Lord Wenlock, roan, bred by Pereyra, sold for \$6,000; (2) Boer 137, roan, bred by Pereda, sold for \$3,200; (3) Baron 049, red and white, bred by Gimenez Paz, sold for \$7,200. Twenty-eight entries, 26 sold, average \$2,688; highest \$7,200, lowest \$1,300.

Born January 1 to June 30, 1900: (1) Ladas 6, roan, champion of the show and winner of special prizes, bred by Thomas Bell, sold for \$10,300; (2) Surcouf, roan, bred by Fages, sold for \$10,500; (3) Somerville 310, roan, bred by Vivot, sold for \$7,000; honorable mention, Mercurio 152, roan, bred by Pereda, sold for \$11,100. Nineteen entries, 18 sold, average \$3,944; highest \$11,100, lowest \$750.

Born between July 1 and December 31, 1900: (1) Farrier Bridekirk, red, bred by Pereyra, sold for \$11,000; (2) Sultan 12, roan, bred by Villafañe, sold for \$4,000; (3) Ulpiano, red, bred by Fages, sold for \$5,300; first honorable mention, Stanley 325, red and white, bred by Vivot, sold for \$4,200; second honorable mention, Boulevard 062, red, bred by Gimenez Paz, sold for \$6,000. Sixty-one entries, 51 sold, average \$2,795; highest \$11,000, lowest \$665.

Born between January 1 and June 30, 1901: (1) Newton Stone, roan, bred by Thomas Bell; (2) Alexandro Beauty 091, roan, bred by Gimenez Paz; (3) Fernando, roan, bred by Aldao. Twenty-three entries, but none of the winners sold; 9 others in the class sold from \$1,100 to \$5,600, average \$1,877.

SHORTHORN COWS.

Born before January 1, 1900: (1) Stella 155, red, bred by José Cobo; (2) Duchess Lily 22, red and white, bred by Anchorena; (3) Celestina 103, roan, bred by Malbran, sold for \$2,000. Seven entries, 1 sale.

Born between January 1 and June 30, 1900: (1) Duchess Lily 26, roan, bred by Anchorena; only entry.

Born between July 1, 1900, and March 1, 1901: (1) Calomel 16, roan, bred by Pereyra; (2) Dalia 89, roan, bred by Pereyra; (3) Rosemary, red and white, bred by Cardenas, sold for \$2,000. Eight entries, 4 sales at \$2,000 each.

HEREFORD BULLS.

Born between March 1 and December 31, 1899: (1) Grandison 42, champion of the breed in the show and also champion of the bulls of the beef races, bred by Villafañe, not sold, and since died; (2) Caronbier 54, bred by Pereda, sold for \$2,150; (3) Kaki 63, bred by Pereda, sold for \$1,100. Four entries, 2 sales.

Born between January 1 and June 30, 1900: (1) Shamrock, bred by Pereyra; (2) Malmesbury 9, bred by Villafañe, sold for \$3,200; (3) Grandison 52, bred by Villafañe, sold for \$2,000. Four entries, 3 sales; lowest \$800.

Born between July 1 and December 31, 1900: (1) Wonderful, bred by Pereyra; (2) Grandison 15, bred by Villafañe; (3) Grandison 55, bred by Villafañe, sold for \$2,500. Fourteen entries; 10 sales at \$500 to \$2,500, average \$925.

Born between January 1 and June 30, 1901: (1) Grandison 63, (2) Grandison 65, and (3) Iron King, all bred by Villafañe, and the 3 sold for \$7,000.

Only 1 Hereford cow, born between July 1, 1900, and March 1, 1901, was shown for a prize: Zamora, shown by Pereyra, and given a second prize, and not sold.

OTHER BREEDS.

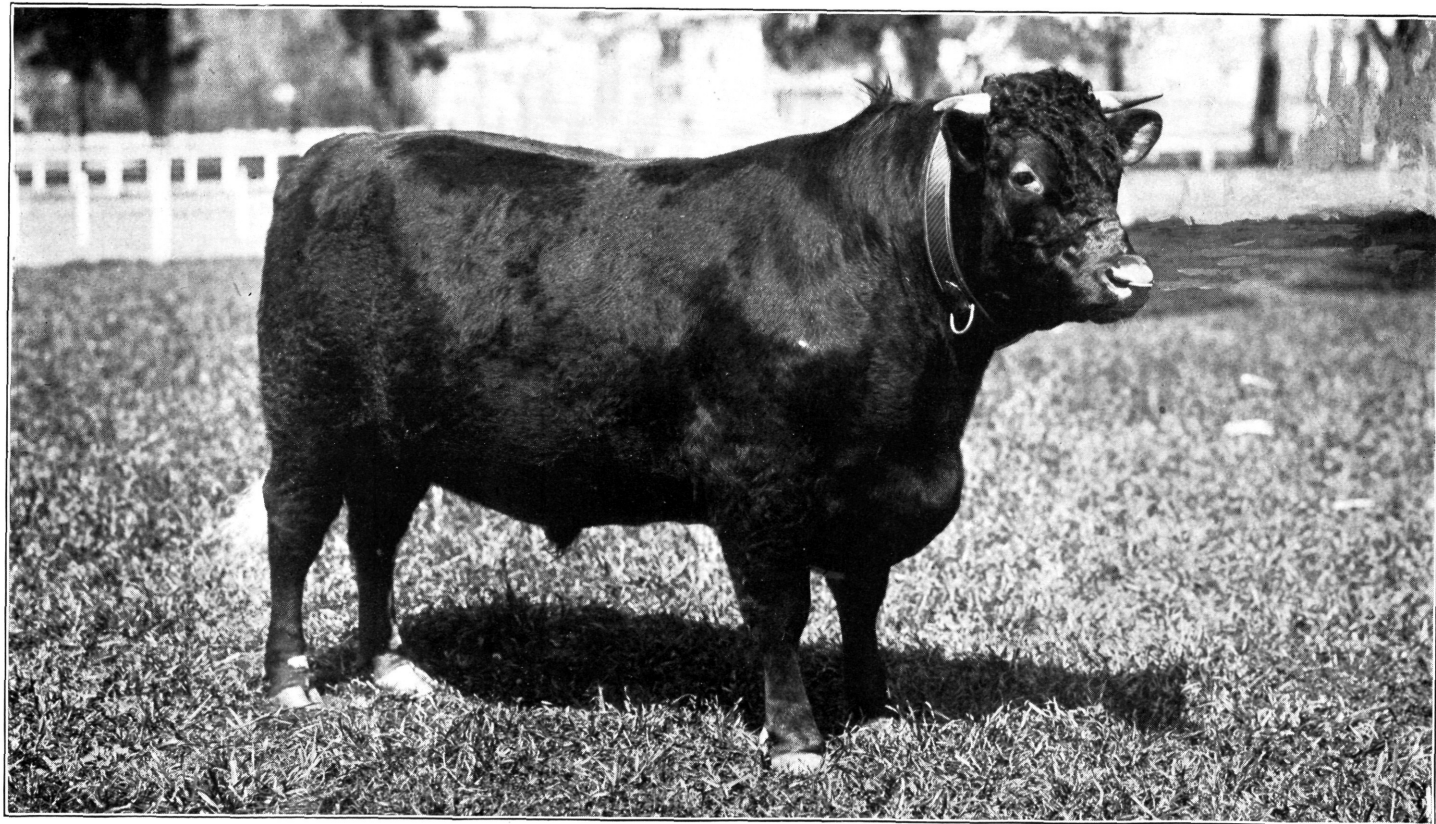
Only 4 Polled Angus bulls were shown for prizes. One was sold for \$500 and another went with two 2-year-old cows for \$1,300 for the lot. Only 3 Polled Angus cows were shown, the winner of the first prize going with the bull referred to and another cow for \$1,300.

A few Holstein bulls were offered, 1 being sold for \$1,050 and 2 others for \$500 each. Only one prize was awarded, and that to the one that sold for \$1,050.

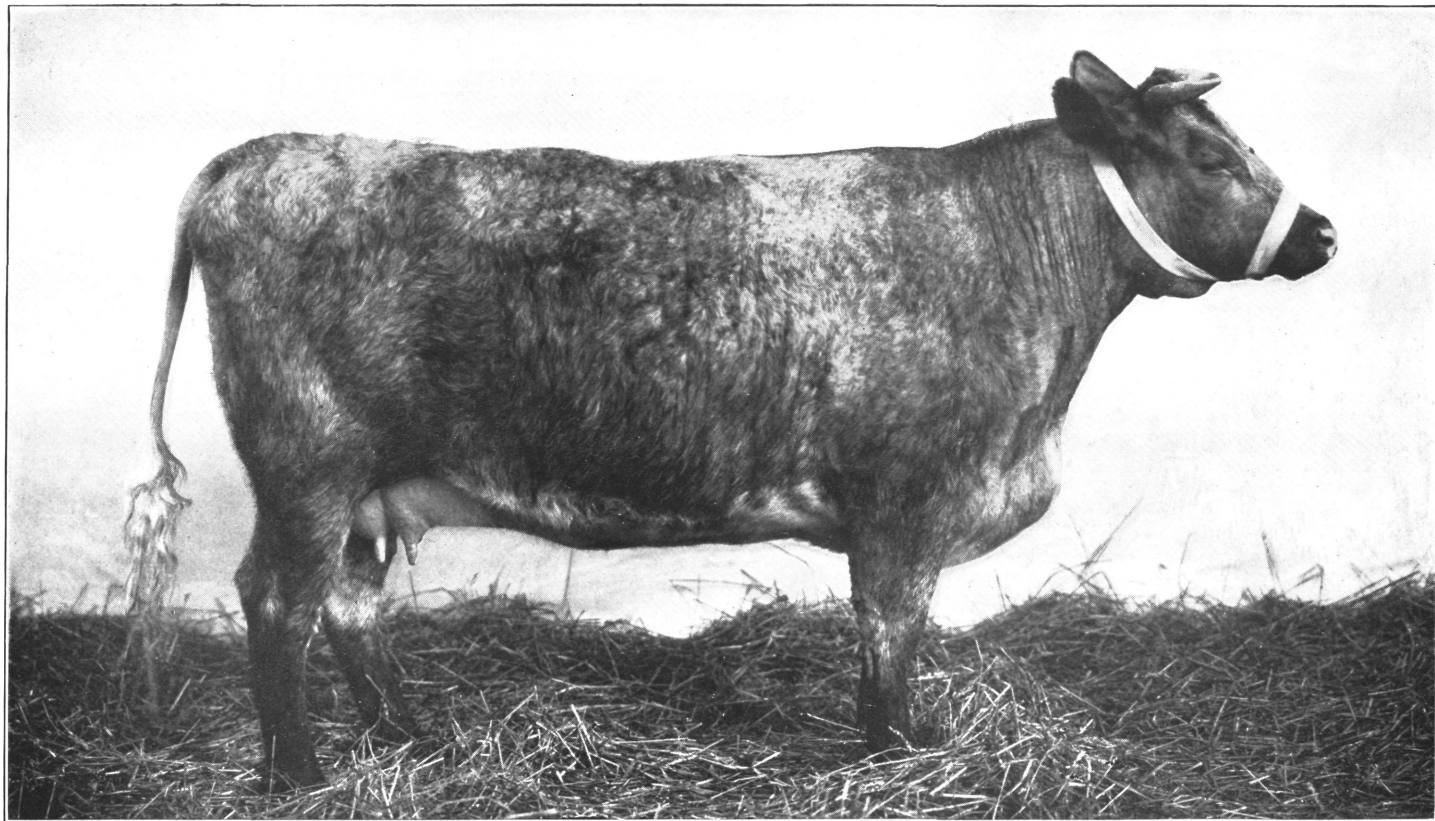
Not a Jersey was to be seen in the show, either for prize or sale. The Jersey herd in Carcarañá, owned by people from the United States who have for years operated a cheese factory there and made it famous, is the only one of any size in the country. Jerseys are regarded as an expensive family luxury and only a few people think of having them, because they do not make beef.

ANIMALS IN GROUPS.

Two groups of Shorthorn bulls of 8 animals each, born in 1900, all registered, the only entries in their classes, sold at \$1,000 to \$2,100



FARRIER BRIDEKIRK, FIRST-PRIZE 2-YEAR-OLD SHORTHORN BULL. SOLD FOR \$11,000.



CALOMEL 16, FIRST-PRIZE 3-YEAR-OLD SHORTHORN COW.



GRANDISON 42, PRIZE CHAMPION HEREFORD, 3½ YEARS OLD.

each, one group averaging \$1,375 and the other \$1,519. Two groups of Herefords of the same grade sold for averages of \$700 and \$625, respectively, they being the only entries. Two groups of 8 Hereford heifers, the only entries, sold at an average of \$270 and \$250, respectively. No Shorthorn heifers were shown in groups for prizes.

GRADE ANIMALS.

Under the head of mestizos, or grades, some very satisfactory sales are recorded, showing the readiness of the Argentine breeder to buy animals on their individual merits, without a recognized pedigree and ineligible to entry in the Argentine herdbook, especially if such animals come from well-known breeders and have been sired by registered bulls. The Shorthorn bulls in this category were shown in groups of 8, and there were 35 entries for prizes, the classification being "Grade Shorthorn bulls of two and four teeth." The group that won the first prize was not sold. The winners of the second prize sold for an average of \$1,731, and the third prize group for an average of \$1,035. Of the 280 animals entered in this class 218 were sold, the average price being \$725. The highest price was \$2,600 and the lowest \$80, the latter for 2 lots only. All the others sold for \$250 or more, generally around \$600 to \$800, while 58 of these young bulls sold for \$1,000 or more. The heifers of the corresponding category sold for less than half, and the best of them were reserved from sale. Of the 120 shown, 56 were sold at an average price of \$345. The first and second prize winners were not offered for sale, and the lot that won third prize sold for an average of \$734—1 of them for \$1,000. These bulls were better animals than those referred to in the beginning of this chapter, the "camp bulls in pen," that sold for an average of \$395.78. The latter were rougher animals, raised in the camp, never having had any special care, and most of them were not so well bred as the ones just referred to, which were entered for prizes. But many successful breeders are going in for bulls that have not been pampered, but have grown up under the conditions which they must meet on the average estancia that is not breeding show animals, but is aiming to produce the most beef of the best quality at the least cost. It is often said in Argentina that the ambition to produce show animals has resulted in lowering the vitality of the sires. "What we want," breeders often say, "is a good supply of young, hardy bulls that have been raised to camp conditions, so they can go out with the herd, take things as they come, and keep in good condition while doing their work and without watching and special care."

Only 5 Hereford grade bulls were shown under the class provided for them, and they sold for \$450 each. Eight Polled Angus heifers sold for \$80 each and 8 Red Lincolns for \$130 each.

ANIMALS FOR SALE ONLY.

Many animals are brought to the exposition for sale only, not being entered for any prize. Under this head 169 purebred Shorthorn bulls were shown, and 127 of them were sold at the average price of \$1,270. The highest price was \$6,900 and the lowest \$250. Four sold for more than \$4,000. These were all from one breeder and were sired by the noted bull Spartan. Three sold for less than \$4,000 and more than \$3,000 and 16 sold for prices between \$2,000 and \$3,000. Nearly all these bulls were born between June and December, 1900.

Seven purebred Herefords of the same class sold for prices ranging from \$550 to \$2,000, or an average of \$1,191; 3 Polled Angus averaged \$423; 3 Holsteins averaged \$550; 5 Flemish averaged \$1,010; 20 Polled Angus camp-bred grade bulls sold for an average of \$210, and 1 lot of heifers for \$45 each. But the Polled Angus is gaining, and many well-informed men in Argentina think it will be the second breed in the country—next to the Shorthorn—though now it is very much below the Hereford in numbers.

Among Argentine breeders there are many wealthy men who will cheerfully pay enormous prices for animals that please their fancy, and they frequently do it. Sometimes this results in stimulating prices to an unnatural extent, but it is certain that superior animals will always find admirers and bring prices that average far above those obtained in the United States. It is true that many good bulls are sold privately in the country at lower prices—from \$100 to \$200—and that there are plenty of native breeders who have not yet learned that it pays to buy a good bull. There are plenty of rough, miserable cattle in the country, but improvement is going on rapidly, as men see that it does not pay to raise poor cattle when on the same amount of land they might be producing good animals and realizing much larger profits. The great increase in the price of land is also leading estancieros to make the most of it, and they can no longer afford to go on in the old loose way, being satisfied with prices of cattle ranging from \$20 to \$35. They must double or treble these figures, and they are doing it; but they must continue to import new blood to keep their herds up or they will surely degenerate.

SHEEP.

As noted elsewhere, the significant feature of the sheep sales was the decline in the prices obtained for Lincolns, as compared with the sales of 1901, and the gain in prices and number sold of Rambouillets and the Downs. The Merino type is surely in better demand, more general, and not confined to a few breeders. The highest price for a Rambouillet ram in the 1901 show was \$7,300, while in this show the highest price was only \$2,000. About 70 per cent more animals were sold in 1902, however, and the average was higher. The Hampshire

Downs held their average well up because they were not numerous and there was a good demand for all. Two lambs 3 months old sold for \$175 each, which is said to be the record price for Hampshire ram lambs of this age. The sales of Hampshire Downs, Oxford Downs, and Shropshires during the year following this show did not develop big prices, as it appears that the breeders supplied their wants mostly during the show.

HORSES.

The horse sales were not particularly noteworthy, nor, for the most part, were the horses shown. The horse business at present is not at its best, though good horses may be produced here very cheaply. The heavy horses were criticised because they were too heavy and did not show life enough. Some of the light roadsters, the Hackneys, and the saddle horses were very attractive and found many admirers. These, it will be noted, brought the best prices. The highest price in the sale was for a beautiful dapple-gray Percheron, 4 years old, named Docil. He was one of five entries in his class in which three prizes were offered, but he was not considered by the judges to be worthy of a prize. The winner of the first prize was not sold, but the second-prize animal brought \$450, while Docil commanded the top price in the whole show. Many other good heavy colts sold for very low prices, which was rather discouraging to the breeders of this class of horses, for some of them were of excellent type and individual qualities. The sales of heavy draft mares was better than in the May show, as they were more uniform and sold for more nearly uniform prices, though rather low as compared with the prices such mares would command elsewhere. But as these were camp-bred animals, the prices were not so low as they seem to the outsider.

The official report of sales made in the exposition is given herewith as it was prepared by the Rural Society. As published, it contained many errors, but some of these have been corrected. It is still incomplete and inaccurate in some respects, however, and, like some other Argentine official statistics, must be taken in a general way—as an approximation and not as an exact statement. For instance, it will be noticed that the average price of heavy “pen” mares is given at \$97.97, while the lowest price is said to be \$100, when it was really \$32. The highest price paid for a heavy stallion is said to have been \$2,400, when one was sold for \$2,600. But, in a general way, it gives an idea of the sales in a condensed form. The cattle sales, as given in detail in the foregoing account, were worked out by the author of this report independent of this record.

In this statement of sales, “stall” and “pen” are translations of Argentine classifications “galpōn” and “corral,” which are used to distinguish animals raised under shelter and with great care from

those raised more or less in the open camp. There is another classification midway between these two, namely, "Criado sistema mixto," meaning, kept part of the time under shelter and part of the time in the open. "Criado á campo" is the expression generally used for an animal that has been raised in the camp altogether.

Condensed statement of sales of live stock in the September-October exposition, Buenos Aires, 1902.

CATTLE.

Breed.	Number exhibited.	Number sold.	Amount of sales.	Highest price.	Lowest price.	Average price.
Shorthorns:						
Stall {Male	301	233	\$462,016	\$11,000	\$400	\$1,982.90
{Female..	19	6	12,000	2,000	2,000	2,000.00
Pen {Male	1,030	790	402,605	2,600	70	509.52
{Female..	460	238	55,530	1,000	40	235.00
Total.....	1,819	1,267	932,551			
Herefords:						
Stall {Male	33	25	35,349	3,200	500	1,415.96
{Female..	7					
Pen {Male	41	28	14,870	1,100	170	513.70
{Female..	16	16	4,160	270	250	260.00
Total.....	97	69	54,379			
Polled Angus:						
Stall {Male	8	5	2,250	550	300	450.00
{Female..	7	5	1,000	200	200	200.00
Pen {Male	62	20	6,425	430	100	321.25
{Female..	29	16	1,000	80	45	62.50
Total.....	106	46	10,675			
Holsteins:						
Stall and pen {Male	6	4	2,600	1,050	200	433.33
{Female..	5					
Total.....	11	4	2,600			
Flemish:						
Stall and pen {Male	5	5	5,050	1,250	900	1,010.00
{Female..	10					
Total.....	15	5	5,050			
Dutch:						
Stall and pen {Male	3	3	1,400	560	400	466.66
{Female..	5					
Total.....	8	3	1,400			
Red Lincoln:						
Stall and pen {Male	3					
{Female..	8	8	1,040	130	130	130.00
Total.....	11					
Red Polled:						
Pen.....Male	1					
Total.....	2,068	1,402	1,007,695			

Condensed statement of sales of live stock in the September-October exposition, Buenos Aires, 1892—Continued.

HORSES.

Breed.		Number exhibited.	Number sold.	Amount of sales.	Highest price.	Lowest price.	Average price.
Saddle:							
Stall.....	{ Male	9	2	\$2,050	\$1,800	\$250	\$1,025.00
	{ Female..	1					
Light draft:							
Stall.....	{ Male	57	28	23,620	2,050	270	843.57
	{ Female..	1	1	350	350	350	350.00
Pen	Female..	52	16	2,080	130	130	130.00
Heavy draft:							
Stall.....	{ Male	109	83	54,390	2,400	110	655.30
	{ Female..	7					
Pen	Female..	78	69	6,759	155	100	97.97
Total.....		314	199	89,249			

SHEEP.

Rambouillet	{ Male	304	213	76,923	2,000	50	261.13
	{ Female..	121	51	3,220	150	40	63.13
Lincoln	{ Male	832	375	84,371	1,600	35	224.98
	{ Female..	123	84	4,150	210	30	49.40
Shropshire	{ Male	105	89	8,220	500	40	£2.35
	{ Female..	35	5	350	70	70	70.00
Oxfordshire	{ Male	60	31	6,844	600	50	220.77
	{ Female..	5					
Hampshire	{ Male	59	31	7,900	600	100	354.83
	{ Female..	74	45	2,250	59	50	50.00
Total.....		1,718	924	194,228			

MISCELLANEOUS.

Pigs.....	Male.....	8	6	280	50	30	46.66
Poultry		136	31	345	50		
Dogs		12					
Grand total for the show		4,256	2,562	1,291,797			

THE HERDBOOKS AND FLOCKBOOKS OF ARGENTINA.

The Rural Society controls all the herdbooks and flockbooks in the country. The Shorthorn herdbook was started about thirty years ago by several breeders and remained a private concern until a little more than two years ago, when it was purchased by the Rural Society. The Hereford herdbook was purchased by this society several years ago, as was also that of the Red Lincolns. The Polled Angus record was started by the society six or seven years ago. There are no rival herdbooks, and the registration in the society's books is recognized everywhere in the country.

There is a commission of three members for each breed. Each member holds office for two years and is eligible for reelection. This commission passes upon all applications for registration, and though an appeal may be taken to the general board of the society, this has

never been done but once, when the commission was sustained. The commission has power to send inspectors to the "cabaña" (breeding establishment) to verify the claim made in the application for registration, but this also has never been done.

Until now any animal that was entitled to registration in the Coates's herdbook of England was admitted to registration in the "Herdbook Argentina." After a long and spirited discussion the directors of the society decided that hereafter no imported Shorthorn can be registered in the Herdbook Argentina unless the first dam and sire of the same inscribed in the pedigree were recorded prior to the year 1850. The argument used to bring about this restriction, which shuts out many bulls that have been going to Argentina from England, was that so long as the Argentine breeders were not permitted to register grade Shorthorns after many years of crossing and improving, English breeders should not be permitted to register animals of five crosses.

Many breeders are in favor of establishing a second herdbook—a preparatory record—in which should be inscribed graded animals after a certain number of crosses, these animals to be eligible to entry in the regular herdbook after a certain number of additional crosses. But these were outvoted when the recent regulation was made.

The beef producer, he who is thinking only of producing good steers, is not particular about the pedigrees of his bulls. He looks to the individual merits of the bulls he is buying first, then seeks to know what breeder they came from, and, lastly, perhaps, to ascertain what sort of ancestors they had. He wants the bull in order to raise steers and has no use for the pedigree.

There are probably not more than fifty breeders in Argentina who are familiar with pedigrees and families and take these into prime consideration in buying bulls. Until very recently the Argentines were thinking wholly of beef. They prefer deep reds and dark roans because, they say, the lighter colors fade out and look very bad in their country.

The certificate of the recognized herdbook in any country will be recognized in Argentina by the Rural Society, provided the animals presented for registration comply with the conditions stated. The American Shorthorn Herd Book has been recognized there before, and so has the Hereford Register. Between the years 1879 and 1887 many Herefords were brought to Argentina from the United States. The certificates of pedigree must be indorsed by the Argentine consul in the port from which the animals are shipped. Animals must be registered within one year after their birth or importation in the country. The fee for the registration of cattle is \$5 for each animal born in the country and \$10 for each imported animal for members of the Rural Society and twice these amounts for those not members.

The flockbooks are held in small repute by the sheep breeders; not that they are not perfectly regular and of a high standard, but the breeders as a rule do not think it worth while to register their animals, particularly ewes. Only about half a dozen breeders register regularly. Rams must come prepared to register, in case the certificates should be called for, but frequently buyers do not ask for them, particularly if they know the reputation of the place they came from. If from the United States, the certificates would undoubtedly be demanded. The flockbooks are based on the English requirements, and the fee for registration is \$1 for individuals and 50 cents per head where the registration is collective, and double these amounts for imported animals. Nonmembers pay double fees. The registration in the flockbooks is increasing, but it will very likely be slow.

The herdbooks and flockbooks are in charge of a competent Englishman, Mr. H. Bruce Percy, who acts as secretary to all the commissions, and is in personal charge of the office in the Rural Society's building in Buenos Aires.

An arbitration board for the settlement of disputes among the members without going into court is one of the benefits open to the members of the Argentine Rural Society. Disputes between members, or between a member and an outsider, may be submitted to this tribunal, which is composed of some of the best men in the country. But both must agree to submit to the decision of the board, and if a member violates the decision he is expelled and posted in disgrace. This board was started about ten years ago and afterwards abandoned, as very few took much interest in it. About two years ago it was revived, but still it is but little patronized. An effort was then made to make it compulsory for both parties to a dispute, if members of the society, to submit their contention to arbitration, which is free of cost, if either party desired it; but this failed.

WHAT ARGENTINE BREEDERS WANT.

An annual exhibition of breeding stock by the Argentine Rural Society will be held during the latter part of September and the first half of October, 1904. At that time the Rural Society's show will probably be an international one, and imported animals may be shown on the grounds; this is not permitted when the show is only national, as it is this year, and imported animals can not be shown for prizes or admitted to the show grounds. Shipments should be made from New York not later than July 1 to 15.

The English ports were opened to Argentine live stock on February 3, 1903, after having been closed nearly three years. A slight outbreak of foot-and-mouth disease on three estancias caused the Argentine Government to close its ports to export animals on May 9, 1903, pending the eradication of this malady, but this may not last more than

a few months. The Argentine Government now (June, 1903) claims that the disease no longer exists in the country and is at present seeking readmission to British markets for live animals. The three months during which the export trade went on stimulated prices and taught the producers of fat cattle and sheep that they can only hope to compete with the United States by producing the best animals and preparing them in the best possible manner.

The danger of war with Chile appears to be past and capital is being more freely invested in the country. Agricultural and stock-breeding operations are being and will be carried on with more certainty every year, as the conditions are being studied and fewer mistakes are being made; hence greater profits and more money to invest in improvements of all kinds. Last year was a bad time, as much uncertainty prevailed. The markets were limited to the local demands and three freezing plants and one chilled-meat concern, with what could be worked up in the way of live-animal trade in South Africa, Spain, Portugal, and Brazil, all of which was not much. Of course, there were the *saladeros* (salting establishments), the makers of *tasajo* (jerked beef), but these showed a heavy falling off during 1902. But now the country exhibits every indication of a boom. The price of country property has advanced 30 per cent within the year, and there is little dissent from the opinion that these values will be maintained. Alfalfa is taking the place of the unproductive wheat fields, and cattle are wanted to eat the alfalfa, though much of it is exported. Two additional chilled-meat establishments are in process of building and others are in prospect, while some of those already in existence are being enlarged. New areas are being opened up at the southwest, new railway lines are in projection both north and south, and all this means a demand for better and more cattle. The same is true of sheep. A change is taking place, as so well told by Mr. Herbert Gibson in a contribution to this report. A demand is felt which the United States can supply—that is, for good mutton sheep.

PREFERENCE FOR SHORTHORNS.

A glance at the report of sales at the last show, given in detail elsewhere, indicates the overwhelming preponderance of Shorthorns in Argentina. Of all the cattle there exhibited (2,067), 1,824 were Shorthorns, and of the total amount of cattle sales (\$1,007,695), the Shorthorns brought \$932,581. This is a fair indication of the preference of *estancieros* in the country. The influence of this great majority of Shorthorn breeders is so great that it is difficult to introduce any other breed, and other breeds do not have the same fair chance that they would if they had more supporters. There are, to be sure, many breeders and advocates of the Hereford as an animal of superior hardiness, good health, feeding qualities under adverse conditions, and a

sure breeder. It is generally admitted that the Hereford is better for poor camps than the Shorthorn, and that he is much better able to endure hardship. In most of the tests for fat steers the Hereford has shown a greater percentage of net beef, winning the championship in the May show of the Rural Society for four consecutive years. The objection made to him is that he does not produce a marketable fat steer as soon as the Shorthorn. It is claimed that in the good camps, on alfalfa or the best native grasses, the Shorthorn is ready for market six months sooner and, age for age, produces a heavier, finer-grained animal. So that it is better at this time to take Shorthorns to that market than any other sort of animal.

Argentine breeders have not gone in for any special strain of Shorthorns, except that now the tremendous impetus given to the dairy industry makes the milk strains popular, as, for instance, those of the Bates family. At present the Cruikshank Shorthorns predominate largely. While breeders there will look very carefully to see that the pedigree is all right, they buy on their individual judgment of the merits of animals offered rather than on the certificates of pedigree that go with them. The Shorthorn bulls must be short in the legs, deep and long in the body, with a good head, full, wide chest, well-laid shoulders, strong loins, and well-sprung ribs, covered with deep, mellow flesh, full hind quarters; and his color will please best if it is a deep red or roan, preferably the former. Special stress is laid on the head there. Bulls should be from 2 to 3 years of age, but not less than 18 months old.

DEMAND FOR COWS.

Some first-class Shorthorn cows, especially those known to be good milkers, and heifers of good milking and beef antecedents, will be sure to bring long prices, for they are very much wanted. It was noticeable at the Rural Society's show that the very limited number of cows shown were of inferior quality compared with the bulls. To be sure, breeders do not like to take fine cows to the show, because they must be fattened more than is good for them, and the inducement is not sufficient, as they do not desire to sell them. A good bull may always be had with a fourth of the effort required to find an equally good cow. Notice that while 233 high-grade bulls were sold, only 6 cows were sold in that class. The 238 Shorthorn cows sold were of the corral, or rougher, class, and yet they sold for an average of \$235, or \$103 United States money. The young bulls of the same class brought an average of \$510, or \$224 gold, and it must be remembered that a great number of these were not purebred, and so had no pedigree. They were bought wholly on their individual merits, and many of them brought from \$1,500 to \$2,000. If the cows had been of equal quality they would have brought much more than they did.

These mestizo cows were, in fact, rather inferior, and were the

second or third choice of the herds from which they came. Often they were merely the pick of general camp stock, and most of them had no pedigree whatever.

The uniformity of the exhibits of some of the better breeders was an indication that they were paying more attention to the selection of dams, recognizing the folly of wasting expensive bulls on poor cows. A very good authority on the selling qualities of breeding stock in Argentina says:

There is a good demand for superior cows, providing they be of conditions to enter the Argentine Herdbook. During the year 1902 all pedigree cows, even inferior and old ones, were sold at very good prices. It is safe to say that there is a buyer for every Shorthorn cow, not necessarily a choice specimen, but of good type and antecedents. Cows to bring top prices here must be strong in the hind quarters; they must have unmistakable beef qualities.

As indicated elsewhere in the reference to the dairy industry, there is a demand for some thoroughly good sires of the dairy breeds, except Jerseys, and a few notably good cows. The Holsteins seem destined to play an important part in the future of the Argentine cattle-breeding industry, and so are the Flemish cattle, neither of which can now be imported into this country from Europe. The strength of the Holsteins in the United States ought to give the breeders of that race a good chance in Argentina.

OTHER BREEDS.

Herefords will not bring high prices there, compared with Shorthorns, though an animal that would command favorable attention, a really great sire, would probably fetch \$5,000, equal to \$2,200 United States money, or possibly a little more. A criticism that is often made of the Argentine herds other than Shorthorns is the lack of really great individual sires. There are breeders of Herefords, Holsteins, and Aberdeen-Angus who will recognize and buy, regardless of price, bulls of the highest merit, but will not look at an ordinary animal. As the importer of these breeds must look to the best breeders for his customers, he must be able to satisfy them.

The following shows a comparison of the prices obtained for Shorthorns and Herefords for three years past in the Rural Society's sales in October:

Prices of purebred and grade Shorthorns and Herefords, 1900-1902.

Year.	Pedigree Shorthorns.	Pedigree Herefords.	Grade Shorthorns.	Grade Herefords.
1900.....	\$1,789	\$895	\$447	\$362
1901.....	2,277	1,937	486	475
1902.....	2,891	1,344	524	297

It is hardly fair to the Herefords to make such a comparison without making allowance for several influences on the prices obtained. In

1901 the Herefords were of a better class than in 1902, though the number of bidders was greater in the latter year. So few animals were presented that one or two high prices paid for individuals in 1901 affected the average. Mr. Eduardo Bullrich, a man well informed on live-stock matters, gives the following opinion concerning Herefords, being the result of years of close observation among breeders and estancieros:

The Hereford is a breed which, for its adaptability to range conditions, hardy constitution, courage, and perseverance, combined with ideal grazing properties, will make its way in our country as well as any other beef breed, though perhaps slowly.

The Polled Angus is making headway and, though but little known, is giving results that are attracting attention. In a circular letter to estancieros advising them what to breed for the new chilled-beef establishment at La Plata, the manager, Mr. Daniel Kingsland, puts Polled Angus second only to Shorthorns. The breed is well adapted to the fine pasturage of the valuable inside camps, as well as to the rougher regions where its vigorous constitution enables it to thrive under conditions that would interfere with success with Shorthorns. Some magnificent steers have appeared in the export markets from the Polled Angus growers. It would not be wise, however, to bring to this market as an experiment more than one Polled Angus bull.

Some first-class Polled Durham or Red Polled bulls ought to find ready buyers, for they have admirers; and there is a tendency among some breeders to dehorn and to strive to produce hornless cattle. The advantages in shipping and handling are sufficient to pay for considerable effort and expense. Dehorning is not much practiced, however, especially upon grown animals. There is a strong prejudice against it on humanitarian grounds. Some breeders and shippers claim that it is an advantage to have the horns in handling cattle on shipboard.

PROFITS OF IMPORTERS.

About three years ago an English importer bought a fine young dark-roan Shorthorn bull at the Belfast fair in Ireland for £105 (\$510.98) and brought it with others to Buenos Aires, where the animals were sold at auction. This young bull, Farrier, attracted the fancy of Señor Leonardo Pereyra, one of the most successful and one of the richest breeders in the country. His estancia, San Juan, is the show place of the country, only an hour's ride from Buenos Aires. Here he has 5 leagues, or nearly 34,000 acres, and in various other parts of the country he owns a total of 80 leagues and many thousand cattle. The San Juan place is the old home place, where his father began the improvement of his stock more than fifty years ago, and is used only for breeding stock. Thirty to forty men are employed to care for the beautiful park which he maintains there. Señor Pereyra breeds Shorthorn and Hereford cattle, Lincoln and Merino sheep, and

various breeds of horses—always winning many prizes at the shows and getting the top prices for the animals he sells.

All this by way of preface to the sale of the handsome roan Short-horn bull that pleased Señor Pereyra. He pleased others also, so that the price went up to \$15,700, or \$6,751 United States money, before the other bidders were willing to quit and let Señor Pereyra have the bull. He has always been well pleased with his bargain, for Farrier has given him about 230 fine calves, among them a prize winner this season, a red bull that was second only to one other in the show in the contest for the championship of Shorthorns. This bull sold for \$11,000, or more than the champion. In the show were 8 or 10 others of Farrier's sons, of which 4 were sold—for \$900, \$3,200, and 2 for \$4,200, respectively—the total sales of Señor Pereyra from this bull alone being \$23,500 in the auction sales in this one show. Others of Farrier's get were reserved from sale.

The tremendous profit realized by the importer of this bull is not a matter of surprise, though a little larger than is often earned. Many bulls are bought in England for £40 and sold in the Argentine spring sales for from \$3,000 to \$7,000 paper, or from six to fourteen times what they cost in England. Often breeders in Argentina order bulls sent out from England or Scotland on commission; that is, buyers in England, familiar with the country and the wants of the Argentine breeders, especially their clients, attend the English sales and buy on the order of the Argentine breeders, receiving a good commission for their services. This generally results in the English breeder getting better prices for his animals, for the agent of the Argentine breeder knows his client expects to pay a handsome price, and when he finds an animal that he thinks will suit he bids till he gets it. When two or three of these buyers come together, it is a fine thing for the English breeder. Those who buy on speculation on their own account for sale at auction in Argentina look about for good animals, which can be bought cheap and sold on their individual merits; and they are very successful in the business. Only a short time ago the bull Royal Duke was bought on order from the herd of the King of England for an Argentine breeder, Señor Manuel José Cobo, for £800, and the bull, being old and in poor health, died on shipboard, insured for £1,200.

When the Argentine ports were closed to importations from England, a clever English importer went to the United States and bought a lot of bulls, mostly those that had been brought previously from England or Scotland, and started for Buenos Aires with them. Some of his rivals heard of it, and the ports were closed to animals from the States on the representation that he was bringing animals from England to the United States to be reshipped to Buenos Aires. This decree was issued the day before his animals left New York, but no advice was sent to New York, and he sailed in ignorance of it. The result was

that the animals lay in Montevideo for eighteen months or more, until they could be admitted here. A bull named Brave Archer was bought in Chicago for \$240 United States money. He had been brought from Scotland about a year before, and though he was a 4-year-old, he sold in Buenos Aires last year for \$6,800.

Some recent importations of light-roan Shorthorns from Scotland sold at \$1,400 to \$2,500, it being the wrong time to offer them, and part of them were withdrawn for later sale. They were not extraordinary animals—some of them being very ordinary—and the prices realized gave the importers a snug profit.

In 1887 some Virginia breeders sent a large consignment of Shorthorns here, and they realized very handsome prices for them, the leading bull bringing \$12,000. They enjoyed a good business, but the revolution in 1890 brought it to an end.

HIGH PRICES FOR ORDINARY ANIMALS.

The following recital of the disposition of a certain shipment of cattle is full of suggestion: The shipment consisted of 1 bull, born March 7, 1900, 14 heifers and cows from 2 to 2½ years old, one of them a cow with a young calf, and one 8-months-old calf. Two of the heifers were ineligible for registry in the Argentine herdbook; one of these sold for \$600 and the other was withdrawn. The heifer calf 8 months old was sold for \$500. The bull was a rather good animal, a deep red, a little rough in shape and faulty in the head, and a trifle faulty in the hind quarters, but in excellent condition, strong, and well developed, and he sold for \$3,500. The general comment among those present was that he was a very good bull for breeding steers, but not good enough for a sire of breeding animals. The heifers, with one or two exceptions, were very inferior. They were mostly roans, with two or three reds. They had suffered from long voyages and the unfavorable conditions at Las Palmas, where they spent eight months after having once been rejected at Buenos Aires because they arrived with foot-and-mouth disease. They were very "leggy," a fault quickly to be noticed in Argentina, and most of them were bad in other respects, particularly in the hind quarters. They were all bred to good bulls, and, being young and of good breeding, familiar to the bidders, and brought by a well-known importer, they brought astonishingly good prices. The lowest price was \$1,000, the highest \$2,000, and the average for 12 was \$1,490. They were offered at a very bad season when very few care to buy. If they had been offered at the time of the September show, they would undoubtedly have brought considerably more.

If these animals, which in this country would have been slow sale at \$150 to \$200 United States money, and might have gone for less, could be sold at an unfavorable time for such good prices, what would be realized for tiptop cows, such as could be sent from the United

States? There is no doubt about there being a good business in taking such excellent animals there. The country is simply hungry for good breeding animals, especially Shorthorns, and cows will be particularly acceptable, because they are badly needed.

FAT-STOCK AND HORSE SHOW.

For several years the Rural Society has given a show in May for horses, fat cattle, and sheep. It is primarily a horse fair, as the sales are chiefly of horses. It is a combination of market and competition for prizes, and many animals are brought to the show to be sold, not being entered for prizes. This show was to be combined with the new agricultural fair this year (see p. 13).

Interest centers in the competition among the Shorthorns for the championship, although for four years prior to 1902 the champion fat steers were Herefords. This is the more remarkable because of the comparatively small number of Herefords bred in the country. In the 1902 show there were twenty lots of 8 steers each competing in the Shorthorn class and only two lots of 8 each in the Hereford, Polled Angus, and Holstein classes. For the Hereford to win under these circumstances, with the great preponderance of opinion against him among the breeders, and hence among the judges, has been a source of much satisfaction to the champions of the breed. In the last show the championship was won by the Shorthorns, but the block test that was made after the award, after the animals were sold and slaughtered by one of the chilled-beef companies, was against the Shorthorns and in favor of the Herefords.

The average weight of the 160 Shorthorns shown, aged about 42 months, was 780 kilos, or 1,719 pounds. They were sold at auction at prices ranging from \$110 to \$310 per animal, and were bought for export, as all good fat steers were then, by the frozen-meat and chilled-meat establishments. This is equivalent to \$48.40 to \$136.40 United States money. The average price was \$187.75, or \$82.61 United States money, or \$4.80 per hundredweight live weight. These are extraordinary prices for prize animals, carefully prepared. The lowest weight was 1,531 pounds and the highest 2,008.

The Herefords averaged in weight 1,815 pounds and sold for an average of \$200, or \$88 United States money. The Polled Angus, with an average weight of 1,318 pounds, sold for an average of \$90. The Holsteins showed an average weight of 1,478 pounds and brought an average price of \$97.50.

The first-prize Shorthorns, the ones that won the championship of all breeds, weighed an average of 1,931 pounds, and one lot of 8 brought \$310 each and the other \$270. When slaughtered they dressed out 62.2 per cent of net beef. The second-prize Shorthorns, composed of three lots of 8 each, averaged in weight 1,885 pounds,

and they sold for an average of \$207. They dressed out 62.8 per cent of net beef. The third-prize group of Shorthorns were the heaviest, averaging 2,008 pounds, but the animals were marked off by the judges for excess of fat and for other reasons. They were sold privately for \$310 each, the same price as the champions. No block test was made of these animals, which were exported alive to South Africa.

The Herefords made a fine showing when slaughtered. The first prize lot weighed an average of 1,821 pounds and sold for \$205 each. They dressed out 65.01 per cent of net beef. The second prize Herefords averaged 1,810 pounds and brought \$195 apiece, giving 62.75 per cent of dressed beef.

No block tests have been reported on the Polled Angus and Holsteins, but the former were not regarded as exceptionally good animals and no prize was awarded them.

KIND OF CATTLE FOR EXPORT AND HOME CONSUMPTION.

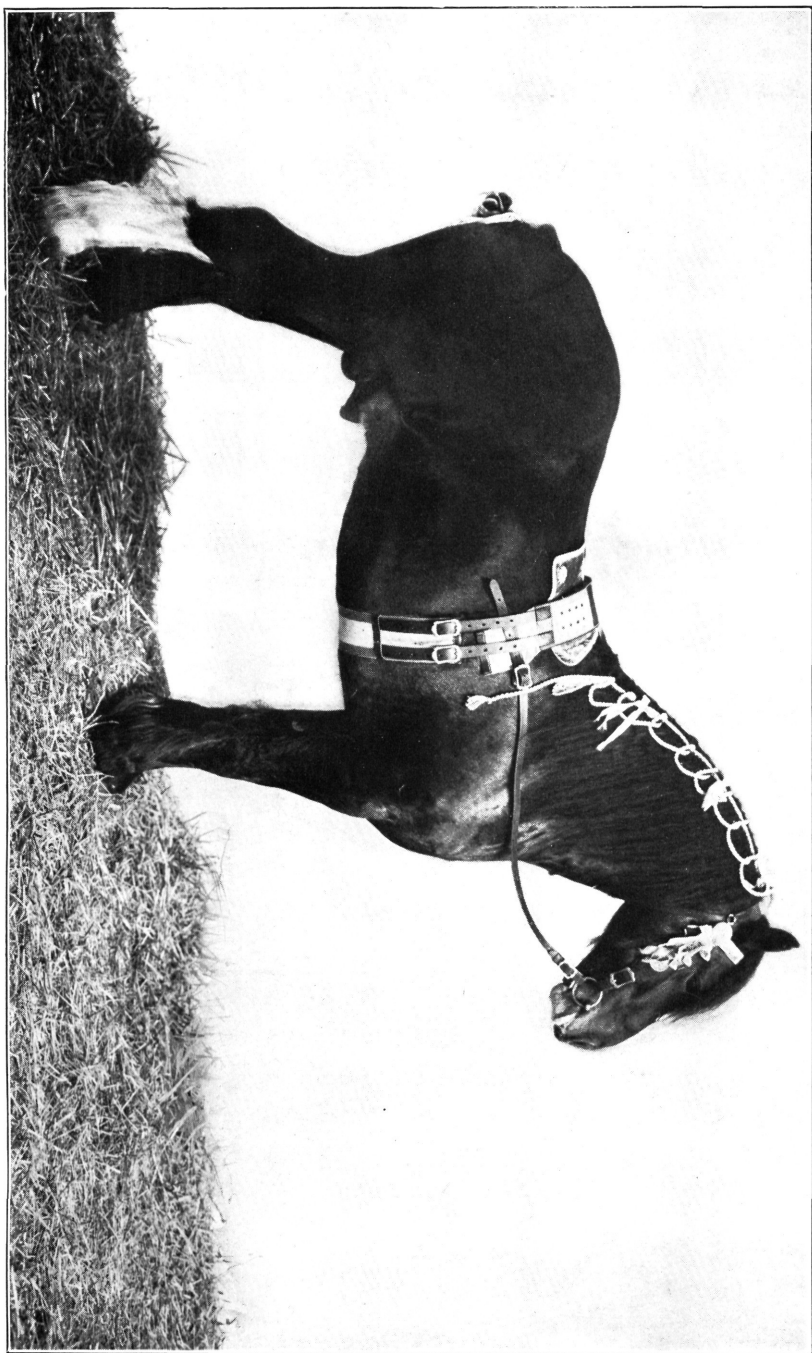
Prior to the opening of the British ports in February, 1903, the best grade Shorthorn steers and other steers that could grade with them were bought for export at \$75 to \$90 and occasionally a little more for very superior animals. When the English ports were again closed to Argentine live stock (May, 1903), the price for the best grass-fed steers of 3 to 3½ years old, the usual selling age for export, was from \$85 to \$115. There was a good demand; in fact, more than the supply could meet and maintain its quality for export. Not 5 per cent of these steers had tasted grain, but the majority of them had been fattened on alfalfa and others on native grasses. This quick production and the ease with which such steers are sold has encroached a little more every year upon the reserve supply; that is, younger animals have been sold for export, fewer good steers are killed for home consumption, and more cows, heifers, and calves, as well as inferior steers and oxen, are used to supply the home markets. Thus it is extremely difficult to get a good piece of beef in the city of Buenos Aires. None of the best fat steers—"export type," they are called—are brought to Buenos Aires to be sold, or at least so rarely that the local markets are not looked to for any part of the supply. If a man has a lot of good steers ready for market, he notifies his broker in Buenos Aires, who notifies the buyers, the "frigorificos," and the exporters of live cattle, and the latter send their representatives to inspect the cattle. Then the buyers make bids, either through the inspectors on the spot or through the brokers in the city. Some estancieros get along without brokers and do business directly with the buyers. The prices quoted are for the animals on the estancia, and it costs from \$8 to \$10 each to bring them to Buenos Aires. The top price of \$115 is but rarely paid. The usual price for the best animals is from \$100 to \$110, and still more are sold to the

frigorificos at \$85 to \$100. Now that the English ports are closed again, there is a decline of perhaps 10 or 15 per cent in the prices of the best steers. These animals range in weight from 1,225 to 1,425 pounds, giving a weight of 700 to 800 pounds of net beef, exclusive of head, feet, kidneys, liver, and other fat and offal. The marketable by-products there are limited and there is much more waste than in the great packing houses in the United States.

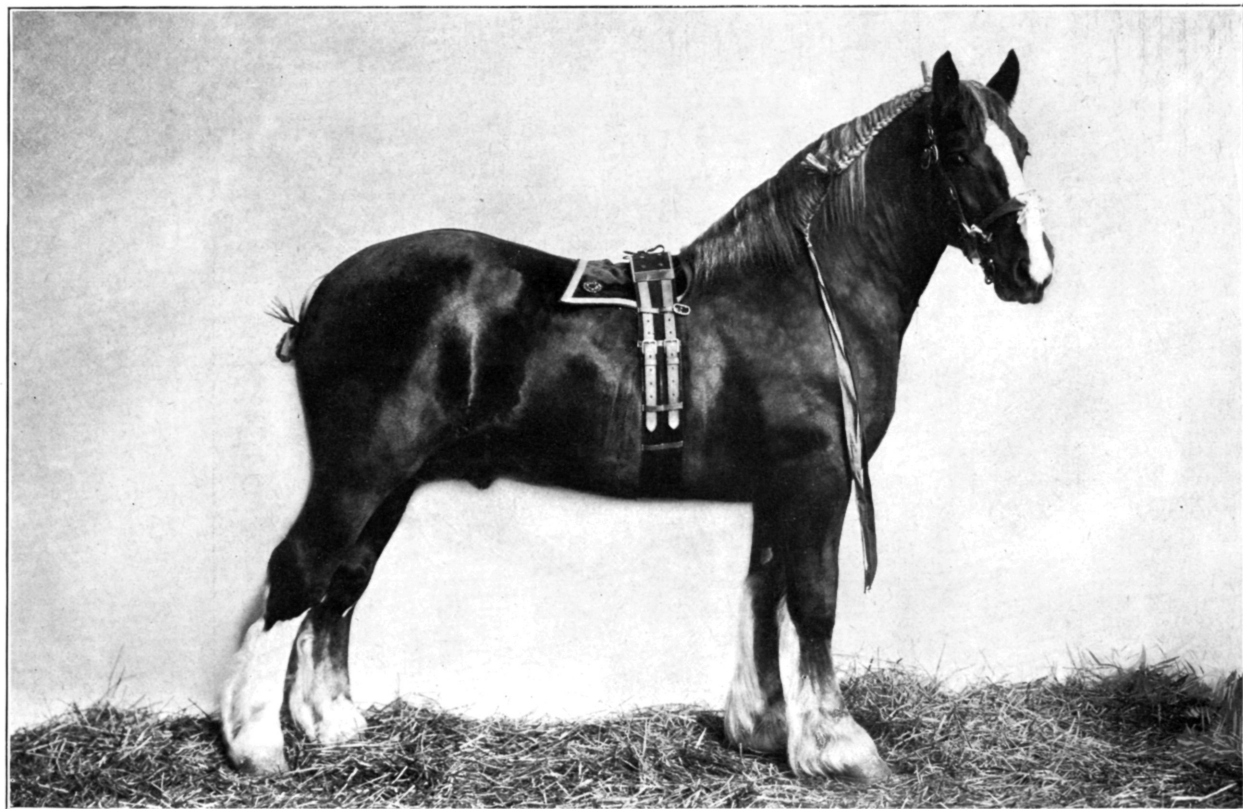
The freezing works prefer steers of greater age because of their greater weight, but there is scarcely a good steer in the country that is 5 years old that could have been sold younger. Very few are kept beyond 4 years; selling at 3 years or younger is happening oftener, and is the general rule. Formerly the selling age was $4\frac{1}{2}$ years. Alfalfa has had more to do with getting the animals on the market a year younger than any other one cause. Cattle for the export trade are shipped to Buenos Aires, 450 to 750 miles, but the cheaper grades are driven at least a good part of the distance, as they will not stand the freight charges, and it is much cheaper to drive them to market. The public roads in Argentina are very wide on this account.

ARGENTINE STEERS ARE GRASS OR ALFALFA FED.

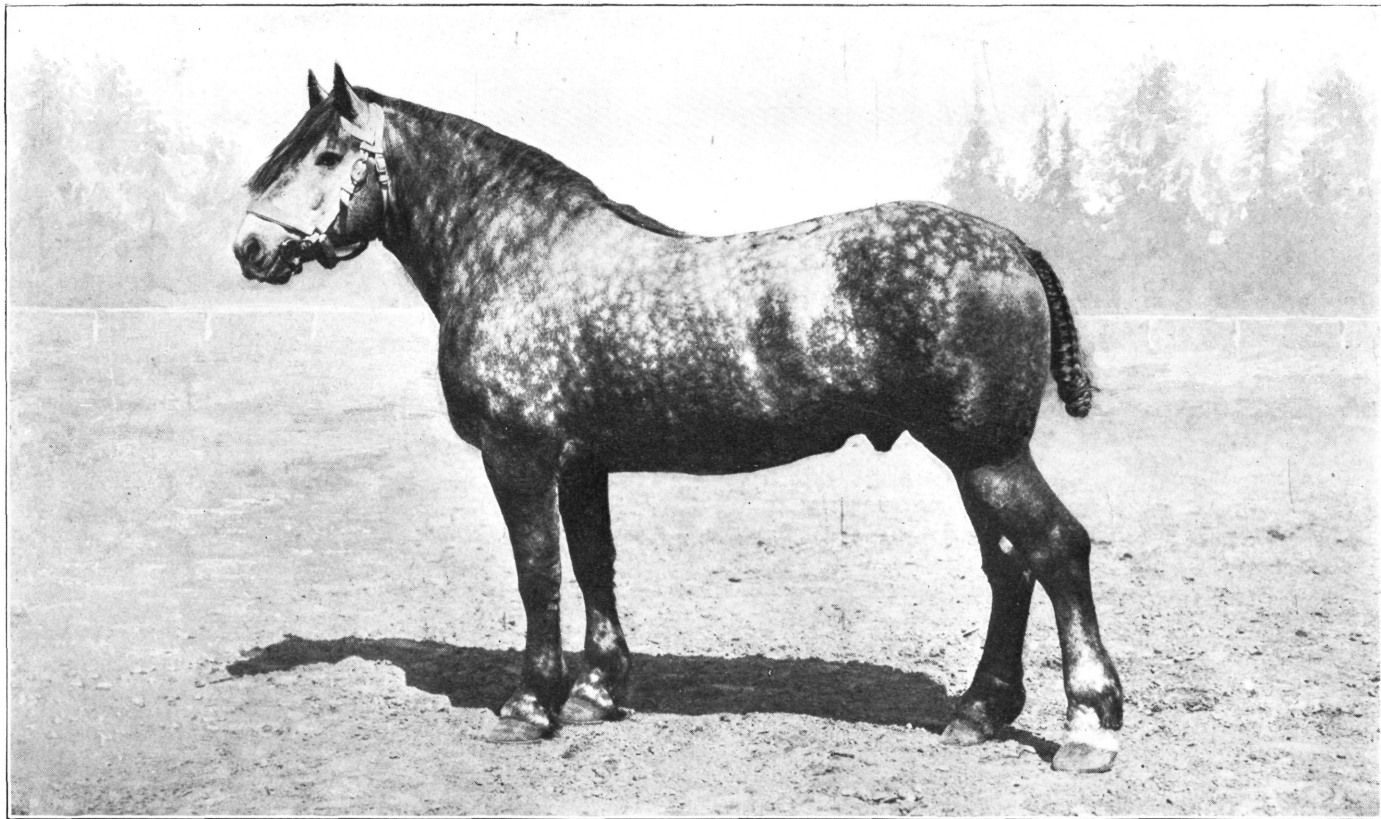
Corn-fed animals are very rarely, almost never, seen. The prices paid for steers by the frigorificos, which, until a few months ago, furnished, and again at the present time do furnish, almost the only market for good steers, did not warrant any corn feeding. A few years ago, before the English ports were closed to Argentine live cattle, so-called corn-fed steers brought \$5 to \$10 per head more than those that had not received any grain. But these were not really corn-fed, for they had received corn and dry hay for a month or so only before being brought to market, and this in order to teach them to eat it on the voyage. They had their accustomed alfalfa or grass pasture during the day and the corn and other dry feed at night. This system may be resumed this winter if the price of corn is lower than it is now. At present producers of fat steers say it would not pay. Corn is now selling for about 35 to 40 cents United States money per American bushel of 56 pounds. It is claimed by many Argentine breeders and feeders that the alfalfa and grass-fed beef is as good as corn-fed beef, but the best-informed ones—those who know the difference and have seen both kinds—realize that the Argentine, who would get the best price for his steers in competition with those from the United States, must finish them on corn, and this course is being advocated by many who predict that this must soon come. It is likely to be a long time, however, before any considerable amount of corn-fed Argentine beef will find its way abroad. It will require some strong object lessons to convince the great mass of producers, because they are doing very well at present; and until they see Argentine corn-fed steers



FIRST-PRIZE CLYDESDALE STALLION. SOLD FOR \$1,500.



FIRST-PRIZE SHIRE STALLION.



DOCIL, PERCHERON STALLION, 3½ YEARS OLD. SOLD FOR \$2,600.

sold in England for a much higher price than the grass-fed ones they will not go to the trouble and expense of feeding. The present tendency toward mixed farming may bring it about to a certain extent, but the country is at present so divided into "zones" for this and that purpose that corn raising and steer feeding are not very likely to be done on the same estancia to any great extent for several years. The increasing demand for such animals, both in England and the United States, is an influence which will sooner or later bring about their production in Argentina, where they can undoubtedly be grown for many years very cheaply. Some feeders tried corn feeding on a small scale several years ago, with excellent success, but they had difficulty in finding any buyer in Argentina who would pay the difference. One breeder tried the sending of a few on his own account, and he says that he made a profit of over \$10 gold per head after charging off all possible expense for feed and labor.

THE MANUFACTURE OF TASAJO DECLINING.

The saladeros are showing rapid falling off in their production of tasajo, or jerked beef, because they can not sell their product at a price that will warrant paying the prices for animals in competition with the frigorificos, the beef-extract factories, the export trade, or even the city market. One great factory has been gradually made over from a jerked-meat establishment into one for the manufacture of beef extract, for which a better quality of meat is used, while only the parts undesirable for beef extract are used for tasajo. One of these companies has just paid a 20 per cent dividend.

MEAT SUPPLY OF BUENOS AIRES.

The beef supply of the city of Buenos Aires comes from one great market, where from 1,200 to 3,500 animals—steers, oxen, cows, heifers, and calves—are brought daily and sold by various commission men to the city butchers. Part of the sales are at auction, but the majority are private. The killing is all done in a place provided by the city and is under municipal inspection. Sheep and hogs, as well as cattle, are all killed here, each man killing on his own account. There is a tremendous waste, especially during the summer, as there is no refrigeration, and all meat is sold the day it is killed, or surely the next day. Many butchers buy carcasses from others who kill by wholesale and supply retailers. If the retailer, when ordering his supply the day before, overestimates the next day's business, he suffers a loss, and it often happens that the price of meat begins to fall before noon and by night is half what it was in the morning, especially if the day has been warm. The meat, besides being usually from inferior animals, is tough and stringy and full of water, shrink-

ing heavily in the cooking. It has had no time to cool, and being grass-fed is watery. Besides, it is sold by the chunk, not by weight, and is cut up in much the same manner as meat is cut for dogs or menagerie beasts. Such a thing as a sirloin or porterhouse steak is unknown in Argentina. The carcasses being hacked to pieces without regard to the choice cuts and sold at a uniform price for the whole, good and bad, makes it very difficult to get a good piece, though sometimes tender, juicy steaks and attractive roasts may be had in the best restaurants and hotels, but it is by no means a sure thing. Several efforts have been made to enforce the municipal law requiring meat to be sold by the kilo; but the butchers are opposed to it, and customers who demand the right to buy by the kilo soon learn that it does not pay, for they get more if they buy by the piece. All these conditions would seem to offer a good opening for a modern fresh-meat establishment in the city of Buenos Aires, supplying good chilled and seasoned meat, properly cut up, with more economical slaughtering and according to better methods.

The prices obtained at the Buenos Aires cattle market vary greatly, according to the quality of the animals offered and the daily demands of the market. For steers the prices run from \$30 to \$75, the average being probably not far from \$50 to \$60. For oxen, about the same. For cows, \$20 to \$60, with occasionally a few at higher prices—those having a little better blood that have been picked up for breeding. Heifers sell at \$14 to \$30 and calves for from \$3 to \$18, the average being somewhere around \$8. Many of the cows, heifers, calves, and steers sold in this market are not slaughtered, but are bought to stock other estancias. This happens very often at the extremes of seasons or when some part of the country has suffered a drought. Under such conditions estancieros find their camps overstocked, so they keep as many animals as they dare—generally more than they should—and send the rest through this market to some more fortunate part of the country where there is feed.

Prices of meat in the Buenos Aires markets at present (May, 1903) are quoted as follows in paper money per pound and piece, but, as a matter of fact, the prices paid are less, because meat is sold by the lump cheaper than it would be by actual weight:

Beef.—Loin, 20 cents; roast, 25 to 32; boiling, for puchero, the poor man's national dish, 16; steaks, 20; rump, 16; breast, 9 to 13; ox tongues, 80 cents each; Hamburg steak, 22; bones, 9.

Veal.—13 to 36 cents.

Pork.—32 to 45 cents, and ham, imported, \$2.04, domestic, 68 cents, the latter being very inferior.

Mutton.—13 to 45 cents.

Lamb.—18 to 36 cents.

Turkeys.—\$3 to \$6 each.

Fowls.—\$1.20 to \$1.50 each.

Chickens.—\$1 to \$1.20 each.

Ducks.—\$1 to \$1.50 each.

Wild ducks.—40 to 70 cents each.

Geese.—\$3.50 each.

Martinettas (similar to quail but larger).—\$1 to \$1.40 a pair.

Partridges.—30 cents per pair.

Pigeons.—60 cents per pair.

Rabbits.—\$1.

SHORTAGE OF COWS IN ARGENTINA.

Returning to the fat-stock show: Some good, fat cows were shown, both Shorthorns and Herefords, but these are only a minor incident of the show and are usually those that have proved useless for breeding purposes. The prices obtained were very poor. The best ones, weighing from 1,400 to 1,500 pounds, were bought by one freezing company—which ordinarily kills no cows of any description—at \$62 to \$77, and others went for \$41. The sacrifice of cows and heifers is one of the most deplorable mistakes now being made in Argentina, and is so regarded by the majority of the most progressive breeders; yet it goes on, as one may see any day by going to the “mataderos,” the municipal slaughtering place in connection with the Buenos Aires cattle market. To be sure, a good proportion of these cows are of a very inferior class—“clearings,” often, from estancias where the stock is being improved. But the number of cows sold for beef is due, in a large measure, to the demand for beef that can not be supplied in any other way and is another evidence that the number of cattle in the country is overestimated and has probably not increased much, if any, since the census of 1895, which placed the total number at 22,000,000. The country is short of cows, and it can not afford to kill them so long as they are useful for breeding. A proposition to restrict the killing of cows to those over 6 years old met with derision. The Government would like to do something to check this destructive practice, but as yet has not found a practical way to begin it, and the same is true in regard to calves.

These conditions indicate how strong the demand is for cows of good blood. The expositions show it by the small numbers of cows and heifers shown or sold. Those who have good cows do not like either to get them in condition to satisfy show demands or to take the risk and undergo the expense of taking them to the shows, and any good breeder who has good cows never thinks of selling them, but rather of watching for a chance to buy more. High-grade cows, as stated elsewhere, are eagerly sought for, and good prices will be paid for them, and have been paid, and are now being paid whenever they are offered.

SALES OF HORSES IN ARGENTINA.

Of the 413 horses in the May horse fair, only a few were worthy of special notice, and these were the light coach and saddle horses. The prices for the great majority of animals sold were very low, but for some of the prize animals, and for the attractive light coach and saddle horses, the prices seemed to be satisfactory, as prices go in that country. The horse business, while it has improved much, is not in as flourishing a condition as it is likely to be. Hard times, bicycles, electric street railways, and even automobiles, so it is said in the papers there, have hurt the horse business. The highest prices obtained were for coach horses, the lighter ones bringing the best prices. The first prize winner in the light coach class, a hackney Anglo-Norman sorrel mare, brought \$2,100, while the third horse in the same class, a gelding from the same breeder, sold for \$2,000, and the second prize winner from another breeder, \$1,000. The third prize pair in coach horses, Yorkshire-American cross, sold for \$1,300. A heavy Shire coach horse, second prize winner, aged 5 years, from an imported sire and purebred mare, sold for \$700. The first prize Anglo-Norman saddle horse sold for \$300, the second for \$250, a few others at \$300 to \$400, and a number of attractive ones from \$100 to \$150. A few hackneys brought \$600 and \$700, but most of them went for much less—around \$100 and even less—and hackney mares sold from \$45 to \$90. The Clydesdales brought very poor prices, and were a rather “logy” lot, most of them, though, of fairly good breeding. Perhaps the fact that grain is not often fed to horses there may have had something to do with this appearance of many horses. The first prize Clydesdales, in groups of 6 colts, sold for \$150 each, the second group for \$195, and the third for \$225. As with the bulls in the fine-stock show, the opinions of buyers do not always agree with those of the judges who award the prizes. Other Clydesdales, pure and of mixed blood, sold as low as \$35 and \$36, and many went at \$55 to \$100, though some also commanded from \$120 to \$180. A great many camp-bred mares and ordinary geldings found slow buyers at \$40 to \$60, and even less than the lower figure. Some sold for only \$15 each. These horses were not worth more than they brought, for an ordinary horse may be bought any day for \$30, or less than \$14 United States money. The “cocheros” (drivers of ordinary carriages for hire) in Buenos Aires, who abuse their horses shamefully, find it cheaper to buy a new horse than to feed or take decent care of the poor old animals they often are seen driving.

Some splendid mules were shown—large, strong animals that were shipped to South Africa and sold at a good price. Two lots were especially noteworthy, the result of a cross of a Poitou jack on Clydesdale mares. But an estanciero who has tried them says that

his colonists found them too slow and lazy and inferior to the smaller but more energetic mule of the country. Still the large mules are in good demand, and a few big American jacks could be disposed of to excellent advantage. Some Texas stockmen who went to Argentina a few months ago to start a stock ranch and do general farming near Lake Nahuel Huapi, in the southwestern part of the Republic, brought two big jacks, which excited a good deal of admiration, and experienced men wanted to know where more such animals could be had. The mule business was a very profitable one for Argentina during the Boer war, and the country, especially the northern part, in the province of Córdoba, has been pretty well drained of mules. The business is practically over now, but breeding is going on, and the demand for mules and for jacks is good.

SALES OF SHEEP IN ARGENTINA.

Only 240 fat sheep were exhibited in the May show, for at that time sheep breeders were rather discouraged, or had been for a year. The prices, both of wool and mutton, were very low. Plenty of sheep were sold in the early part of the year 1902 for \$1 to \$1.50. Fat sheep, fit for export, were bringing only \$4 to \$5.50, and the market for these was confined to the three freezing works. There is record of the sale of three lots of these sheep, 120 in all. Two lots of 40—one of Lincolns and one of Hampshire Downs—sold for \$5.50 each, while another lot of 40 Lincolns went for \$4.80.

ANIMAL SANITARY REGULATIONS.

The Argentine Government devoted much effort during the year 1902 to the task of persuading the British Board of Agriculture, not only that Argentina is free from foot-and-mouth disease, but that there is no danger of its being brought into the country from its neighbors, especially from Uruguay, and in turn sent again to the foreign cattle markets in England. Many times it seemed that the English ports, closed to Argentine cattle and sheep in April, 1900, were about to be opened, but some new objection from the British Board of Agriculture would prevent it. The influence of the English meat producers was very great and the English breeders seemed to be in great fear of another outbreak from imported infection. But at last the Argentine Government was able to comply with the conditions imposed by the British Board of Agriculture, and on February 3, 1903, the bars were let down, permitting Argentine sheep and cattle to be sent to the English ports alive under conditions similar to those required of importations from the United States. The conditions required of the Argentine Government were not severe, once the fact was established, as it undoubtedly was, that foot-and-mouth disease did not exist in Argentina and had not for a year been within

the limits of the territory from which cattle are exported or alfalfa shipped that could be infected. The best authorities in Argentina do not deny, but freely admit, that foot-and-mouth disease is liable to appear at any time in places, and it exists now in some of the distant provinces, from which cattle are not exported and but seldom brought directly to market. They are brought to better camps to be fattened before they are exported or slaughtered, and the contention is that the system of inspection within this territory is so thorough that the existence of the disease is detected immediately upon its appearance. Rigorous measures are then taken to confine it, and it is soon stamped out. So men like Ronaldo Tidblom, the chief live-stock authority of Argentina and director of the bureau of animal industry, claim that there is no danger of infected animals being exported or of arriving with the disease. No animal can be exported without having first been inspected on the estancia by a Federal Government inspector and again in the port of Buenos Aires, Rosario, or La Plata, whence animals may be exported.

The recent outbreak that caused the Argentine Government to promptly prohibit exportation of all kinds of live animals to whatever destination was confined to three estancias within 65 miles of the city of Buenos Aires. It first appeared among some imported animals undergoing quarantine in the port. The first animal showing the disease was promptly slaughtered. In a day or two 2 other animals appearing infected were also slaughtered. The next day 7 more showed the disease, and by this time the origin of it had been traced to green alfalfa brought from an estancia which was shown to have the disease. Thereupon, it being proved that the animals had not brought the disease with them from England, and that all were infected, no more were killed, and all that pass the tuberculin test at the termination of the quarantine, after they recover from the apthious fever (or aftosa, as foot-and-mouth disease is called there), will be admitted the same as if they had not had the disease. In the meantime the places of its appearance were quarantined. The authorities do not anticipate any further spread of the disease and expect it will all be over in a month or so.^a The closing of the ports was out of regard for the English fear of the disease and to show a determined effort to maintain a clean bill of health.

The close proximity of the Republic of Uruguay, where more or less the same conditions prevail as in Argentina, led the British Board of Agriculture to insist that the Argentine Government must either induce Uruguay to adopt the same regulations or exclude Uruguayan cattle altogether from the country. The negotiations with Uruguay were attended with difficulty. The saladeros, or jerked-meat

^a Since this was written the Argentine Government has declared officially that the disease no longer exists in the country.

factories, on the Uruguay River, on both sides, get their cattle from both sides of the river. The stockmen of the Argentine province of Entre Rios sell many of their cattle to the Uruguayan saladeros, and the Argentine saladeros get cattle from Uruguay. There were other dealings in feeders and fat stock, so the suspension of this traffic would have entailed heavy losses. The last point discussed was the desire of Uruguay to be allowed to load live stock on the same ships with Argentine animals for England and other points. This was not agreeable to the Buenos Aires Government, as it would involve additional risk of disease appearing among the animals on the voyage and there would be no way of knowing in which country it originated. Finally the Uruguayan Government agreed to the conditions, as it shares, on equal terms, in the benefits of admission to the English market, while the work of removing the obstacles has been done by the Argentines.

The Governments of Argentina and Uruguay have made regulations in substance as follows, governing the importation and exportation of animals, in compliance with the demands of the British Board of Agriculture:

Article 1 prohibits (*a*) the importation or landing of animals, animal remains, etc., from any country where dangerous contagious or infectious animal diseases exist; (*b*) the importation of animals from a country whose laws do not, in the opinion of the executive, offer sufficient guarantee against contagion; (*c*) the importation of animals from abroad through any other port than Buenos Aires; (*d*) the importation of animals from any country that have originally come from a prohibited country; (*e*) the importation of animals in a ship which has, within thirty days of its embarkation, loaded animals in a prohibited country; (*f*) the importation of animals in a ship which, after loading, has been in contact with any kind of animals proceeding from a prohibited country, or which has called at any port of such a country; (*g*) the entry into an Argentine port of any ship which has, during the preceding sixty days, loaded animals of such a country; (*h*) the importation of animals having "garrapatas," or Texas fever ticks.

Article 2 prohibits the exportation of animals attacked by contagious diseases, or suspected of being so, or bruised, and of those that have not undergone veterinary inspection on the estancia and at the port of embarkation, and that have not been transported in disinfected vehicles. Also exportation in a ship which has on board animals from a prohibited nation or that has not been disinfected after having remained in or touched at, during the preceding sixty days, the port of a nation under prohibition by reason of the cattle plague, or during thirty days, if prohibited on account of the existence of pleuro-pneumonia, foot-and-mouth disease, or glanders; also the exportation of cattle having the Texas fever ticks.

The importation of all classes of animals from Russia, Roumania,

Servia, Cape Colony, Natal, Orange River Colony, and other British colonies in South Africa; the German and Portuguese possessions of East and West Africa, the French possessions of West Africa, and Madagascar, Bolivia, Ecuador, Peru, Venezuela, Colombia, and English, Dutch, and French Guiana is prohibited.

Importation of cattle, sheep, goats, and hogs from the continent of Europe, Australia, Brazil, Chile, Paraguay, and from the States of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island, of the United States, is prohibited. There is no prohibition against the rest of the United States, the New England States having been included in the prohibited list because of the outbreak of foot-and-mouth disease there. This prohibition will be removed when the disease, in the opinion of the United States Department of Agriculture, is effectually stamped out.^a

Article 4 requires that animals imported must be accompanied by a certificate (in the United States from the Department of Agriculture) showing that the cattle plague has not existed for ten years in the country from which they proceed; and that neither pleuro-pneumonia nor foot-and-mouth disease has existed there during the preceding six months; that as regards sheep it must be shown that no case of small-pox in sheep has occurred during the six months; as regards horses a similar certificate in reference to glanders and lampas. This certificate must be indorsed by the Argentine consul at the port of embarkation.

Provision is made for the inspection of ships bringing live stock and for segregation and quarantine, or destruction if they have the prescribed diseases, of animals not found in perfect sanitary condition.

Article 6 specifies the quarantine and inspection of animals imported, as follows: Cattle, 40 days, during which neither the owner nor anyone representing him may have access to the animals. At the expiration of this period cattle are subjected to the tuberculin test, and if they react, showing that they have tuberculosis, they must be slaughtered without compensation or removed from the country within 8 days. Sheep are to be kept in quarantine and isolated for 15 days and horses for 8 days. Horses may be tested for glanders at the expiration of the quarantine period, and if they have the disease, or if they have been in contact with horses suffering from glanders, must be slaughtered without compensation. The length of the quarantine is at the discretion of the director of the division de ganaderia (bureau of animal industry) and may be extended, though it is not likely to be.

Special provisions are made for commerce between the Republics of Argentina and Uruguay, requiring thorough inspection and dipping in the official dipping places for killing ticks. Importations from

^a Foot-and-mouth disease has entirely disappeared from the United States, and on July 20, 1903, the Secretary of Agriculture issued an order reopening the port of Boston for export cattle.—EDITOR.

Uruguay are not subject to the same regulations as other countries, the certificate of health of cattle and other animals being more inclusive and being given from each section of the country from which animals proceed.

CONDITIONS AND COST OF ADMISSION OF BREEDING STOCK.

All breeding stock is admitted free of duty. Importers should form a connection at Buenos Aires before shipping, as it will be a great advantage upon arrival.

The auction house of Adolfo Bullrich & Co., of Buenos Aires is one of the most prominent in Argentina; in fact, it sells more than half of all the breeding stock sold in the country. The founder of the establishment has been mayor of Buenos Aires two terms, and he will spend some months this year traveling in the United States studying our breeding establishments. His son, Eduardo Bullrich, is the manager. These men speak English and have a wide knowledge of the country and large acquaintance and influence with breeders of Argentina.

Breeding stock, feeding stock, farms of all kinds, city property, and almost everything, in fact, is sold at auction in Argentina. The sales are held in a great market, running through from one street to another, in the very midst of the business district. Here the animals are kept on exhibition for two or three weeks generally previous to the sales. The sales are well advertised and are attended by the leading breeders, especially during the spring sales—in September and October.

The service in the embarcadero, where animals are detained during quarantine and the owners are not allowed to see them, is generally quite satisfactory to the English importers of Buenos Aires. There has been no complaint aside from one lot, but, on the contrary, the service has been complimented. There is no cause to anticipate any trouble or excessive charge, the regular rates being given herewith. The auctioneer's commission is 6 per cent on sales, and the other expenses upon arrival in Buenos Aires, aside from personal expenses, until the animals are sold, are as follows:

At the landing stage, or embarcadero:

Unloading cattle or horses, per head.....	“\$2. 00
Unloading sheep, per head.....	.50
Feed (hay, maize, and bran) per diem per head—	
Cattle and horses.....	1.50
Cattle and horses, with oil cake and oats.....	2.00
Sheep (hay, maize, and bran), per head.....	.40
Entrance and crane fee (Government tax on landing stage)—	
Cattle and horses, gold.....	.05
Sheep, gold.....	.01

“All reference to money, unless gold is specified, is in Argentine paper, worth 44 cents in United States money on the dollar.

Clearing at the custom-house:

Stamps for clearing, \$1 per \$1,000 declared value.

Stamps for documents, \$6.75 on each consignment.

Fee of custom-house broker, from \$10 to \$25, according to shipment.

At the auction house:

Feed (hay, maize, bran, and oil cake) per diem—

Cattle and horses, per head \$2.00

Sheep, per head50

Driving from landing stage pens to auction mart:

Cattle and horses, per head 1.50

Cartage of cattle, according to number of animals, as may be arranged.

Cartage of sheep per cart 2.00

Receiving animals and delivery at auction mart is gratis.

So little business has been offered in recent years that there are no regular fixed rates on the shipment of animals from New York to Buenos Aires. Four English companies run regular steamers direct from New York to Buenos Aires, and they have all expressed a willingness to accommodate shippers of pedigreed stock to a greater or less extent. These companies are the Prince Line, the Lamport & Holt Line, the Norton Line, and Houlder Brothers. The rates are as follows, in United States money: Cattle, \$55 per head; sheep, \$13.20 per head; horses, \$82.50 per head; donkeys, \$27.50 per head.

The animals will usually be carried on the after deck, in the open, with proper cover. The voyage, except the last four days, is a smooth and warm one usually, especially in the season when shipments should be made. From Rio de Janeiro to Montevideo it is likely to be cool and rough in July and August, so that precautions should be taken to protect the animals.

The steamship company supplies nothing but water to the animals. All feed must be supplied by the shipper, but it is carried free unless there is a large amount in excess of what is required; in that case it is charged freight at the rate of \$3.86 per ton. Where 6 cattle, or 35 sheep, or 4 horses are shipped at one time, free passage is given to one attendant unless he requires cabin accommodations, in which case he is charged \$50 passage money. The voyage is not an unpleasant one; the ships are fairly comfortable for a few passengers, and it is highly advisable that valuable animals should be in the care of some one who understands them and is personally interested in their welfare. Arrangements can be made with the captain of the ship for the care of the animals by the crew, however, for a small fee. It is of the utmost importance that the animals shall have plenty of cool, fresh water during the voyage, not only for drinking, but for bathing the animals while passing through the Tropics. Salt water will not do, as it causes irritation of the skin and makes the coat look rough. Coal dust has the same effect. Stalls should be padded for the same reason, as it will pay to make sure that animals arrive looking as well as pos-

sible. A laxative should be provided for use while passing through the Tropics. The length of the voyage varies from twenty-three to thirty days.

Insurance on the animals against all risks may be had in reliable companies for from 5 to 10 per cent, depending upon the line and the ship, and it is advisable to carry insurance, as the steamship company does not assume any responsibility.

THE DAIRY INDUSTRY.

During the year 1902 Argentina exported 9,308,200 pounds of butter, chiefly to England and South Africa. This was an increase of 187 per cent over the exportation of the previous year, which was 3,232,391 pounds. There are no statistics of production for home consumption, but the best estimate available—that of the Rural Society—puts the production of the province of Buenos Aires at 20 tons per day. The production and consumption of butter outside this province is not possible to estimate closely, but certainly all the rest of the country does not produce 10 per cent of the amount produced in this province, if we leave out of the account the amount produced and consumed in the city and vicinity of Rosario, the second city of the Republic, having a population of over 120,000. Even this city is supplied, to a large extent, from the province of Buenos Aires, for as yet only a small proportion of the estancieros are making butter. The private production and consumption must also be omitted in this comparison, for that is increasing on the estancias. Still there are thousands of people owning various numbers of cattle who either go without butter or buy it in the towns.

The city of Buenos Aires, with its 876,000 people, is, of course, the chief local market for Argentine butter, and it is well supplied with a very good quality. The consumption is estimated at only 4½ pounds per capita per annum. The working classes do not have butter on their tables as they do in the United States. The present price in the city is about 22 to 24 cents gold per pound.

To supply the demand there are four great factories or systems of factories. Their plan of operation is something unique. The industry is, of course, only in its incipiency, but it is interesting to note the process and rapidity of its development, its extensive possibilities, and the probability of its immediate and tremendous growth.

La Union Argentina, the chief butter maker of Argentina, is a cooperative creamery on a very large scale. It was organized in 1899 to save the butter industry from the collapse that threatened it, which was due to the wastefulness of small individual production and the lack of uniformity and modern methods. The last report of the

Argentine Rural Society gives an account of the organization and operation of La Union Argentina, which is in substance as follows:

The applicant for membership must be a producer of milk, agree not to dispose of it or any of its products except through the society, and he must own five shares. But one need not be a member in order to receive the benefits of the organization, since members and nonmembers are treated alike in the charges for services rendered, and are paid the proceeds of sales in the same manner and at the same time. The society receives any amount of milk or cream from any person, whether member or not, to be made into butter. Patrons of the society pay the expenses of the creamery—freights and other expenses—in proportion to the value of their consignments. Those who send milk are not charged for the use of the separators. A commission of 8 cents paper per kilo is charged on the butter made from either milk sent in and separated or from cream that has been separated before being sent to the factory. This amounts to about 1.6 cents gold per pound, and is to cover the following charges:

- (1) Freight charges on milk or cream.
- (2) Cartage on cream from the railway station in Buenos Aires to the factory.
- (3) Attending to orders for utensils, for fuel, instructions, etc.
- (4) Cans for transporting cream.
- (5) Inspection of the separators by frequent tests of the separated milk.
- (6) Making, care, and sale of butter.

The society does not purchase milk or cream, nor does it guarantee any fixed price for the butter made from either. After testing each consignment it is made into butter, and the directors fix the basis for making up the monthly accounts in accordance with the prices obtained.

The society had thirty-five producing members on the 1st of May, 1899, and the increase has been so rapid that in September, 1902, it had 1,134 consignors of milk and cream, members and nonmembers, and forty-three creameries throughout the province of Buenos Aires and two in Entre Rios. Since the latter date four new creameries have been started in the province of Entre Rios. These new creameries were started by the producers subscribing for the stock to the extent of the cost of the machinery, at the same time declaring in writing how much milk each can furnish daily. Each of these creameries is separating about 7,000 quarts of milk per day. The society has many cream-separating stations throughout the country, wherever the milk can be obtained in sufficient quantities. The daily production of the society is now about eighteen tons.

A creamery in Argentina means a place where cream is separated from milk and the cream sent to the factory in the city to be made into butter, cheese, or other milk product. What we understand as a creamery is called a "fabrica de manteca," or butter factory, in Argentina. La Union Argentina makes all its butter in Buenos Aires, receiving cream from many stations, or creameries, scattered all through the provinces where dairying has been taken up. Two of these stations are in the northern part of the Province of Santa Fé, in the Jewish colony. The cream is sent daily to Buenos Aires, twenty hours by train, in all weather, without ice. The colonists get about $2\frac{1}{2}$ cents paper per liter in winter and $3\frac{1}{2}$ cents in summer for their milk, equivalent to a trifle more than 1 cent gold per quart in the winter and 1.4 cents in the summer, with which they are well satisfied. They set the cans containing milk out in the road in the hot sun and the creamery wagon comes along and picks them up, dropping the empty

cans in the same manner. The skimmed milk is used at the creamery to feed pigs.

The railway rates for the transportation of milk and cream, per 100 kilos (220 pounds) are as follows, in Argentine paper money:

Less than 50 kilometers (31 miles): Southern, \$1.36; Western, \$1; Rosario, \$0.90; and the Pacific, \$0.73.

From 50 to 100 kilometers (31 to 62 miles): Southern, \$1.57; Western, \$1.20; Rosario, \$1.70; and the Pacific, \$2.40.

From 200 to 300 kilometers (124 to 186 miles): Southern, \$2.18; Western, \$2.86; Rosario, \$3.40; and the Pacific, \$6.

From 300 to 900 kilometers (186 to 559 miles): Southern, \$2.27; Western, \$3.64; Rosario, \$4.30; and the Pacific, \$9.

The Jewish colony referred to ships by the Rosario line and pays the highest figure, as it is 355 miles from Buenos Aires. There is much complaint, especially from dairymen near Buenos Aires, of the high rates of transportation maintained by the railways.

The society protects the reputation of its butter product by requiring every exporter to brand the cases "Producto Argentino," and to receive shipments on shipboard directly from the society. The price obtained by the producer is not far from 80 cents paper per kilo, or 16 cents gold per pound. The average price in London in 1902 was about 22.5 cents gold per pound, leaving a comfortable margin to cover the cost of shipment and give the exporter a satisfactory profit. The average Buenos Aires prices, in December, for four years, have been, in gold, as follows: 1899, 19.2 cents; 1900, 19.6 cents; 1901, 20 cents; 1902, 18.2 cents.

Argentine butter has won a good reputation in the English markets, and has been sold in competition with the French, Holland, and Australian products at prices almost as good as the best, and it has been gaining in price as well as in quantity exported. The amount of the exportation is increasing rapidly, as new creameries are being erected, and the capacity of those already in operation is being enlarged. New territory is being opened up and separating stations established, where the milk is brought and the cream taken out and sent to Buenos Aires or some other place to be made into butter.

Argentine butter is of a very good quality, and uniformity is secured by the large production under one management. It lacks the firmness and grain of United States butter, however, and even without considering the fact that it is never salted, unless so ordered, it does not seem to have quite the rich flavor of that made in the best creameries in the United States. However, it suits the European market very well and is gaining ground there. The South African market is also an important one for Argentina in this respect, as in others. The salted butter, which is worked twice, being left to stand

over night after salting, is of a very fine, even quality, firm and rich in flavor, and compares very well with that made in the United States.

The city of Buenos Aires has three great dairy companies that supply all milk products to the people at retail and also make some butter for export and for sale outside Buenos Aires. There are two or three other butter manufacturing companies that buy milk and cream and export butter, and within a year or two these will be numerous.

The dairy business in the city of Buenos Aires is interesting and in some ways unique. Three companies have large dairies of their own, where attention has been for some years given to the breeding of milch cows. The peculiarity of the dairy industry there is the establishment all over the city by these three companies of little lecherias, or milk depots, where milk is sold in every form, both fresh and manufactured. These little shops are located in all parts of the city, even on the principal shopping streets, and are very clean and attractive. The interior is always painted white, and the attendants are usually young women. Milk as a beverage is popular, and all these places have it fresh, sweet, and cool, and also buttermilk and other milk beverages. A large glass of milk costs 10 cents paper, or a little over 4 cents of our money. It is estimated that the three companies sell daily from 18,000 to 19,000 glasses. The daily consumption of milk in the city is about 200,000 liters, or 211,340 quarts. These hygienically conducted establishments sell about one-fifth of it. The rest is sold in a multitude of ways by small dairies. Many of them drive the cows about and milk them in the streets as the milk is called for by their patrons. Others do not take the cows out, but keep them in prominent places in the city, and milk them on order, so people can see what they are getting. Some lecheros (milk sellers) still go about in the old fashion, with milk cans on horseback, as they still do in the provincial towns. The three companies referred to sell milk at 15 cents per liter, or 20 cents delivered. The prices obtained by the other milk sellers range from 8 to 20 cents paper per liter, according to the quality of the milk and the repute of the dealer. The city has a system of inspection of milk, but through lack of sufficient inspectors it is not very efficient. The milk is usually of a fair quality, and that of the three companies is always good. Sterilized milk, which they prepare and sell in sealed bottles, is much used.

Two of the three companies have contributed to the advancement of the dairy industry by the development of manufactured products from it. One has two fine estancias about 60 miles from Buenos Aires stocked with about 2,000 cows, as well as other stock. The cream is separated from the milk on the estancia, and only the cream is sent to the factory in Buenos Aires. Casein, also an important export product, is taken out of the milk after the cream has been extracted, and

what remains is fed to pigs. Besides butter and sterilized milk, the dairy companies make a preparation peculiar to Argentina, known as "dulce de leche," literally, "sweet of milk." This confection is made by boiling whole milk and sugar for several hours, with constant stirring, until it becomes very thick, a sugary paste that is delicious as a dressing or as a dessert by itself, and is very popular there. The people make it themselves and use it freely. Condensed milk of excellent quality, both sweetened and natural, is made by these companies. Another milk product that has found high favor in Buenos Aires is that known as "leche maternizada," or baby's milk. One company has been especially successful with this milk prepared for infants. It is put up in sealed bottles, and it retains its sweetness without carrying any deleterious substance. People taking long voyages often take hundreds of bottles of this milk for the use of the baby. The same company makes fine toilet soap and several other products from milk. Two put up butter in small tins, also sterilized milk, for export.

The keen rivalry among these companies, especially the two best known, shows the interest taken in the development of the dairy industry. Their exhibits at the recent show attracted more attention than any other feature. The business in all these lines is developing with a rush, but it is certainly permanently established and destined to be one of the chief sources of Argentine wealth. The waste of milk that has been going on in the country has begun to decrease; estancieros are beginning to understand the importance of making the most out of the milk and to see the mistake they have been making in allowing the calves to have it.

SELECTION OF COWS FOR MILKING QUALITIES.

Estancieros are looking to their breeding to get milking qualities, something to which the average breeder has given no thought heretofore. The dairy breeds, except the Jersey, are attracting more attention. For this reason milk-giving Shorthorns will commend themselves to Argentines, provided that they are also meat producers; that is, a Bates cow or bull, known to have a good milk-producing inheritance, will be regarded very favorably, provided the animal promises to produce first-class beef animals also. Formerly nothing but beef was thought of; cows were rarely milked, and calves ran with their mothers until they were 8 or 9 months old. Now they speak of taming cows to milk as they would of breaking a wild horse. The progressive breeders and estancieros are making selections of their cows with regard to their milking qualities, and are seeking to improve the amount and quality of the milk of their offspring.

Holsteins have some strong admirers, and Dr. Enrique Fynn, one of the principal breeders of Argentina, is about to make a visit to the

United States to secure some new breeding stock which the laws of Argentina do not permit him to bring from the Continent of Europe. He is well satisfied as to the superiority of the Holstein for his purpose and as a meat producer at the same time. The Holsteins are stronger in the country than any other of the special dairy breeds.

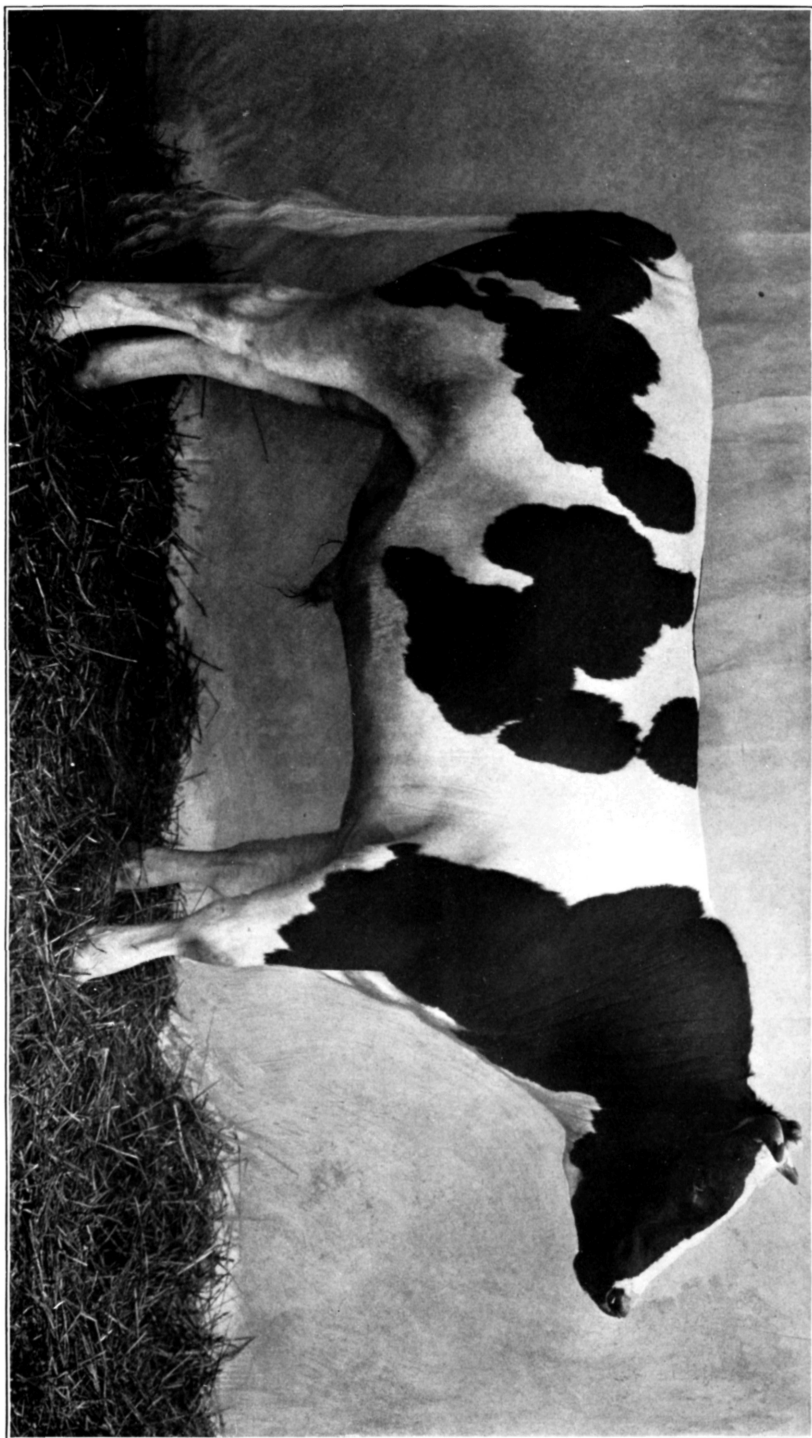
Flemish cattle have been bred for fifteen years on one estancia near Las Heras, about 60 miles southwest of Buenos Aires. One owner has won many prizes with his cattle. He obtained his first stock nearly twenty years ago and has imported a number of well-bred cows from Belgium since. The importation of cattle and sheep from the Continent of Europe to Argentina is prohibited under the agreement with England whereby the English ports were reopened to live animals from Argentina, but such importation had not been permitted for two or three years before. There is no likelihood that European animals will be admitted to Argentina for many years. The supply of Flemish and Holstein breeding stock is very small in the country. There are but two or three herds of each worth mentioning and scarcely any first-class breeding stock is on the market. The strong interest in the dairy industry makes it certain that superior purebred animals of this class which, in addition to their well-known milk-producing powers, show beef qualities at the same time, will find a quick and very satisfactory sale in this market. This applies to Shorthorns as well as to Holstein and Flemish cattle. Tiptop young animals may be relied upon if properly presented to bring anywhere from \$800 to \$5,000 gold, and \$1,500 would seem to be a safe figure to count on. If the animals were of right kind in all particulars they would bring more rather than less if offered at the right time.

One breeder has been trying a cross between Shorthorn and Flemish cattle with significant results. Shorthorn and Shorthorn-Flemish steers of the same age were prepared for market under precisely the same conditions. The Shorthorns averaged 1,218 pounds, while the cross-bred steers gave an average of 1,441 pounds. It is claimed for this cross that it produces a cow almost as good as the Flemish and a steer better than the Flemish and generally as good as the Shorthorn; that the cross-bred steer is hardier than the Shorthorn and matures equally early. The milk test in the recent show also gives some strong evidence favorable to this cross, which now has many advocates and is likely to be tried by others.

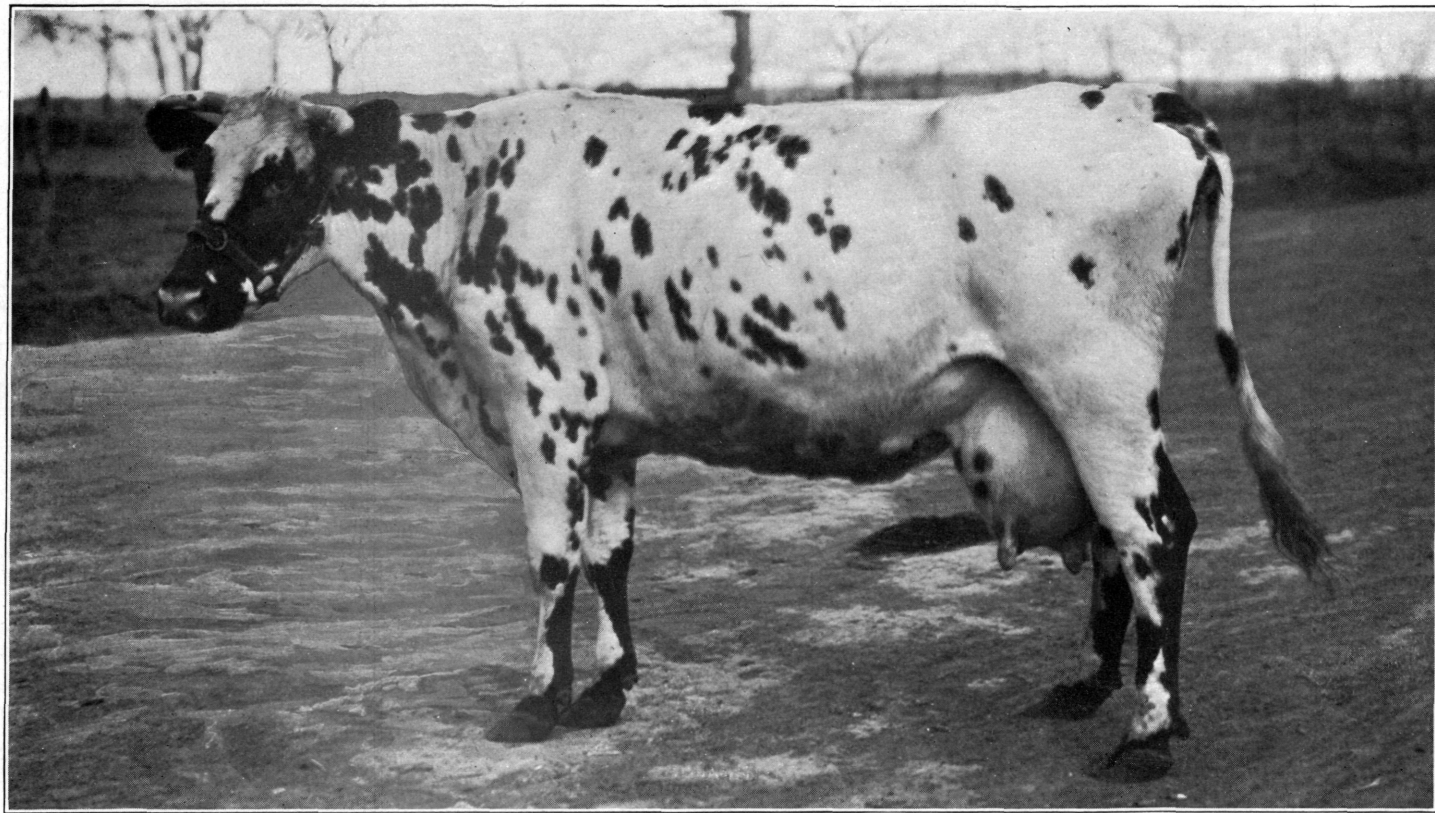
But those who believe in producing milch cows by a careful selection of Shorthorns are probably four times as numerous as the supporters of all other breeds combined in Argentina, for no claims are made for the Hereford in this respect

TEST OF DAIRY COWS.

The practical test of dairy cows was one of the most interesting and instructive features of the exposition. The competition was among



DE WET, FIRST-PRIZE HOLSTEIN BULL, 22 MONTHS OLD. SOLD FOR \$1,050.



BEST COW OF FLEMISH GROUP, WINNING CHAMPIONSHIP IN DAIRY TEST.

This cow gave 35 liters of milk per day.

lots of 5 cows each. They were given the same food and milk morning and evening for three days under the inspection of the judges. Seven lots of Shorthorns, two of Holsteins, one of Shorthorn-Flemish, and one of Polled Angus were entered. Championship prizes were offered for the group showing the greatest aggregate quantity of milk, quality considered, and for the one showing the greatest percentage of butter fat. All the cows were accompanied by their calves and had, of course, been carefully selected and prepared for this competition, though they had not been allowed to become fat. The result was very gratifying to the advocates of the Flemish and the Shorthorn-Flemish cross. The fact should not be overlooked, however, that the Flemish cows were the result of fifteen or twenty years of careful and intelligent selection from a large herd of the best original Belgian stock and its descendants, while the Holsteins have had only six years of selection from a comparatively small herd.

The Holstein people here feel sure that their breed will furnish a better animal for beef and milk combined, alleging that—

(1) Holsteins are hardier, better adapted to the open life of the Argentine camp, to which they are subjected, than either Shorthorns or Flemish. Holsteins, they say, do better in the open camp than under shelter, requiring the freedom of the open air to produce the best results.

(2) Holsteins are less liable to disease than either Flemish or Shorthorns.

(3) The milking qualities of Holsteins of the same care in breeding and selection are equal to Flemish, and they generally produce better beef animals.

The official report of the milk tests, on which the awards of both championship prizes were made, and others, is as follows, as reduced to our weights and measures:

Record of tests of dairy breeds of cows.

The produce of 5 cows in each lot for three consecutive days.

Breed.	Milk.	Butter fat.	Butter.
	<i>Quarts.</i>	<i>Per cent.</i>	<i>Pounds.</i>
Flemish	357.12	3.175	25.58
Shorthorn-Flemish.....	300.63	3.883	26.61
Holsteins	359.86	3.033	22.49
Do	255.72	3.075	17.59
Shorthorns	236.70	3.701	19.86
Do	184.65	3.658	18.47
Do	278.96	3.983	18.47
Do	226.39	3.325	16.91
Do	194.15	3.816	16.71
Do	165.37	3.316	12.26
Do	149.51	3.083	10.36
Polled Angus.....	210.80	3.400	16.18

SACRIFICE OF COWS.

There is no reliable or complete information as to the number of cows being milked or the number not being milked. No live-stock census has been attempted since 1895, and the best-informed men in the country do not believe there has been much increase in the number of animals since that time, if there has been any increase. So many losses have been incurred, so many cows have been killed, and the younger animals have been drawn upon so heavily for export that the natural increase has been kept down. One estimate, crediting each cow with 30 kilos, or 66.13 pounds, is that only 137,000 cows supplied the export butter trade of 1902. Against this development of a small percentage of the cows of the country, to which should be added those employed in producing butter for home consumption and other milk products, which, all told, can not be more than 1,000,000 and probably fewer, we have some idea of the destruction of cows. In 1902, 96,900 cows were slaughtered in the saladeros, or jerked-beef factories. This was more than three times as many as were consumed there in 1897, when the number was 32,093. In the Buenos Aires slaughter yards 84,902 cows were killed for beef in 1901, and in 1902 the number was 109,890. The same thing is going on all over the country. To be sure, the cows slaughtered are the inferior ones, but by no means old ones only. It suits the men who are improving their stock to get rid of the poorer cows to the best advantage, and that is for slaughter.

"But it is a bad thing for the country to have so many cows killed," says Ronaldo Tidblom, director of the bureau of animal industry. "The better class of estancieros, those having valuable camps, may not find it to their advantage to keep these cows, but they are needed outside on lands not so valuable, where any cow is better than no cow. For the interests of the country at large, we can not afford to have so many young cows slaughtered, and measures will be taken to prevent the killing of cows under 5 or 6 years old. We would like to say 7 years, but that is impracticable, because it is difficult to keep account of the age of cows after they have all their teeth. So the best we can do is to prohibit the killing of cows before they have all their teeth and are known to be 5 or 6 years old. Then we hope the surplus cows of the inside camps will find their way outside, where they are needed. This subject will be discussed in congress this winter and something will be done."

STATISTICS OF PRODUCTION AND CAPACITY.

The dairy industry is not yet sufficiently organized to permit one to say what it costs to produce a pound of butter, or what the average yield of milk per cow is, or what cows are worth. These things

can only be approximated. It is safe to say that the average estancia cow does not average much more than 5 or perhaps $5\frac{1}{2}$ quarts per day, and that this milk will not test on the average through the year more than 2.8 to 3 per cent butter fat; in many cases it will be more, and in the fall—in April and May—the percentage of butter fat will rise considerably. Some herds will average 3 per cent or a trifle more, but 3 per cent the year around is considered good. As to yield in quantity, many cows will not give more than 4 or $4\frac{1}{2}$ quarts per day, while others will give much more. The following estimate is given by the Rural Society in its annual report, the information having been furnished by La Union Argentina:

To produce a pound of butter, 10 English quarts (equal to 12 United States quarts) or about 25 pounds of milk are required. The cows in our dairies and estancias, a cross of Shorthorn and criolla (the native half-wild stock) will yield about $5\frac{1}{2}$ quarts per day, remaining in milk for about 210 days. It must be remembered that in all dairy herds there are always about 30 per cent of the cows that can not be milked for one reason or another.

The average cost of a dairy cow and calf is about \$30 (United States); if the yield is greater than the average of $5\frac{1}{2}$ quarts, the cost is proportionately higher, as it is considered that each additional quart of milk yield represents an additional value of about \$5 gold; so a cow giving 9 quarts is worth from \$45 to \$50, and if it gives from 13 to 15 quarts, \$65 to \$75. About 90 per cent of our dairy cows are graded Shorthorns. Three cows with their calves require about two squares ($8\frac{1}{4}$ acres) of land. Rent of land is about \$1.50 gold per acre per year. Care and milking in each dairy (120 to 150 cows) requires three experienced men. The wages of these men would be a little over \$15 gold per month, with board and lodging, which represents about \$8 gold in addition. The price paid for milk by the creameries is about $1\frac{1}{2}$ cents gold per quart.

The prices here given for cows are rarely realized except for the very best class of graded Shorthorns—known to have good blood. The average cow sells for half or less than half the amount quoted. The rental price for land is low except for land far out in the outside camps.

At present the business is confined to the northern two-thirds of the province of Buenos Aires, southern and eastern Córdoba, and most of Santa Fé and Entre Rios, except the northern parts, where it is too hot. The development of dairying is not only increasing with great rapidity in that territory, but is going beyond it, especially to the south and west, so it seems safe to count on seeing several million more cows being milked in two or three years and a consequent enormous increase in the exportation of butter from Argentina.

In the dry times and in the spring when the grass is watery the tests for butter fat run very low. One of the oldest and best herds of beef Shorthorns has had cows giving at these times as low as 1.7 to 1.8 per cent. Reliable creamery tests through the year gave this herd but 2.31 per cent butter fat on about 300 cows—a very low average. In the same vicinity another herd, consisting of Shorthorns, grade Short-

horns, and a slight strain of Jersey in some animals, averaged 3.22 per cent of butter fat, which is above the general average for that section of the country. A herd of Jerseys belonging to the creamery, of which 250 are always being milked, gives 4.36 per cent of butter fat. All these tests cover a period of twenty-two months, four composite tests being made each month. The locality was Carcarañá, province of Santa Fé, near Rosario, and the period included a very serious drought, during which the cows suffered much. Some of them were fed a little dry alfalfa during the worst time. The creamery herd of Jerseys is fed nothing but a handful of chopped alfalfa and bran at milking time to keep them quiet. During this period of twenty-two months the Jerseys on alfalfa averaged $6\frac{1}{2}$ liters daily, though this is far from a fair indication of what they do there, because of the drought and short pasturage. Many individuals in this herd give 20 liters a day when in full flow and test 6 per cent butter fat—sometimes as high as 6.8 per cent. The Jersey calves are taken from their mothers as soon as they are born, and most of the bulls are sold as soon as possible for veal. Though they are very well bred, and in the United States would be valuable for breeding animals, there is no demand for them there. The Jersey is a very unpopular breed in Argentina because it gives so little beef, and, though occasionally a rich estanciero or breeder has a few Jerseys for his own family use, they are regarded as an expensive luxury. The Carcarañá people raised a few steers from their Jerseys for their own use and found the beef good, though the animals were small.

CHEESE BUSINESS NOT SATISFACTORY.

The Carcarañá creamery is managed by an American and is one of the oldest in the country, having until recently a very profitable, almost monopolistic, business in cheese. The Carcarañá cheese is famous all over the country. The factory was started many years ago by a citizen of the United States, who died about two years ago. At first it was a butter factory, but the cheese business, once the conditions peculiar to the country were mastered, was very profitable until others began to follow them into the industry, which resulted in overstocking the limited Argentine market with various sorts of cheese. The overproduction reduced the price one-third; now it is only about 80 cents paper per kilo, or about 16 cents gold per pound. They tried to export, but lost money in the South African market.

The Carcarañá cheese is a rich full-cream cheese of excellent quality, but, like all other cheese made in Argentina, its sale is and will for some time be limited. The cheese industry in the country is more or less in this condition generally and is not very prosperous; therefore attention is turned chiefly to butter.

EXPERIMENTS IN COMPARISON OF BREEDS.

An experiment recently made on the Graña Blanca estancia, near Las Heras, 60 miles southwest of Buenos Aires, gives a reliable record and comparison of four lots of cows—two of Shorthorns, one of Flemish, and one of Holsteins—covering an entire year. The following table gives the result in United States quarts:

Milk yield and percentage of butter fat in cows of different breeds.

Year and month.	Herd No. 1, 170 Shorthorns.		Herd No. 2, 170 Flemish.		Herd No. 3, 130 Holsteins.		Herd No. 4, 170 Shorthorns.	
	Quarts.	Percent- age of butter fat.	Quarts.	Percent- age of butter fat.	Quarts.	Percent- age of butter fat.	Quarts.	Percent- age of butter fat.
1901.								
July	18,927	3.7	17,964	3.2	10,908	3.0	17,355	3.1
August	22,173	3.7	13,758	3.3	17,769	3.4	19,368	3.3
September	20,302	3.4	19,243	2.6	14,122	3.4	17,966	3.0
October	22,847	2.9	22,736	2.6	17,030	2.6	20,483	2.9
November	30,411	3.1	30,594	2.4	15,202	2.7	32,536	2.8
December	33,955	2.8	31,669	2.6	21,633	2.7	42,479	2.8
1902.								
January	34,574	3.4	31,173	2.9	24,917	3.1	48,376	3.1
February	34,942	3.5	30,181	2.7	22,620	3.0	42,226	3.1
March	28,916	3.8	30,560	3.2	20,365	3.3	33,815	3.4
April	26,397	4.3	30,266	3.2	13,743	3.6	27,063	3.6
May	19,047	4.3	27,419	3.3	13,093	3.6	17,689	3.7
June	17,662	3.8	25,382	3.1	12,336	3.5	13,959	3.1
Total	310,153	.....	310,945	.....	203,738	.....	333,315	.....
Average		3.6		2.9		3.2		3.2

Condensed statement.

Breed.	Total production.		Production per cow.		Average of butter fat.
	Per year.	Per day.	Per year.	Per day.	
	Quarts.	Quarts.	Quarts.	Quarts.	Per cent.
No. 1, 170 Shorthorns.....	310,152	850	1,824	5	3.5
No. 2, 170 Flemish	310,945	852	1,828	5	2.9
No. 3, 130 Holsteins.....	203,737	558	1,567	4	3.2
No. 4, 170 Shorthorns.....	333,316	913	1,960	5	3.2

The Shorthorns have been going through a process of selection for eleven years, especially herd No. 1, showing a little better results than herd No. 4. The Flemish cows were bought only two years before and were not selected animals; many were only heifers, so the comparison is hardly fair to them. The Holsteins have been on the place six years and included practically the entire herd of this breed, both inferior and superior. The Gerber test was used to determine the percentage of butter fat in the milk. These averages are considered very good, running through the year, of cows kept all the time in the

open camp. Another test near Buenos Aires, of which careful record was kept every day for ten years, for each individual cow in a herd of 200 grade Shorthorns, nearly pure, shows a steady average of 3 to 3.5 per cent of butter fat through the year. These cows were in the open camp, on natural grasses, with perhaps a little dry alfalfa in the winter.

HOW COWS ARE FED.

The cows in the Graña Blanca experiment were given no dry feed, except occasionally a little dry alfalfa, when the pasture was dry in the winter; but this is done only by a small minority of estancieros. Most cattle—and, indeed, these cows most of the time—live and fatten and the cows give rich milk the year around on the native grasses and nothing more. They do not have so much alfalfa in this part of the country as in others, as it does not do well. Alfalfa in this section lasts only seven years at best, and if cattle are put on it, only two years, as a rule. But the native grasses are very rich and, in ordinary times, furnish abundant feed through the year. There are winter grasses and summer grasses, succeeding each other, so that there is always fresh grass; and, unless a drought occurs, there is never need of giving dry feed, even to fatten steers. The estimate put upon the carrying capacity of the native grasses in this district is 2 cattle per square (4.17 acres) the year around, or 1 per square for fattening. In the spring and summer the camps will carry more, especially the so-called refined camps, that have been in use for some years with cattle and not overstocked, so the better grasses predominate. But if pastures are stocked to the limit in the summer they will not be in condition to carry the cattle in the winter.

Not only the wild native grasses, but several of the tame grasses and forage plants well known in Europe, which it is declared have never been artificially planted here, are to be found in these refined^a camps.

Among them are white clover, rye grass, and timothy, all of which I have seen growing on Buenos Aires estancias, where people insist that it has never been planted. There are several others of these grasses that appear and flourish at different times in the year.

The thistles of Argentina were once considered one of the most valuable cattle foods, and in all the camps that are without alfalfa they are yet highly valued, and often come in very opportunely when other pastos, or grasses, are not at their best, especially in winter. In fact, it was with serious hesitation that estancieros began to destroy the thistles in order to put in alfalfa. The pioneers in alfalfa began more than twenty years ago, and among the earliest and most prominent of them were the Benitz Brothers, from California, on their estancia "La California," about 70 miles northwest from Rosario, the second city and produce market of Argentina. They were the first to have a league of land in alfalfa. When they began they were warned

^a A refined camp is a portion of the country better developed than others.

by the natives of the folly of plowing up the thistles, and were assured that they would suffer for it, but their success has proved that they were right.

But the usefulness of the thistle is not entirely past. The three principal varieties that mark the "refinement" of the camp are *cardo negro*, or black thistle, the first to appear; *cardo de castilla*, or Spanish thistle, which follows in two or three years; and *cardo asnal*, or coarse thistle, the last to appear, after the camp has been in process of "refinement" for several years. The last is the best for cattle and is considered a valuable forage plant in some sections where there is no alfalfa. It is green in the winter, even in dry times, and the cattle like it.

CARRYING CAPACITY OF PASTURES.

The carrying capacity of an Argentine camp varies so widely from the rich alfalfares, or alfalfa pastures, and inside natural camps to the more or less barren outside camps that it is impossible to say what the country at large will do. Director Tidblom makes an estimate of 1 bovine animal to 6 acres and 1 sheep to 1 acre. This applies to the distant pampas, where the grasses are not so rich and the water is scarce, but it does not apply to the sections in which cattle are fattened, or where they will be fattened for a good many years. Regions like that will produce stock cattle to be fattened on richer pasturage, nearer market. In the province of Córdoba, for instance, the natural grass, or *pasto fuerte*, as it is called, will carry about 800 animals per league, or 1 to 8 acres, but they do not get fat by any means. On the same land put into alfalfa 3,000 head of cattle are kept fat the year around. The land is divided into several *poteros*, or pastures, and the cattle are moved about from one to another of these. There are plenty of places in the country where the same conditions prevail, and they are fast being made over into alfalfares. Many landowners are gradually working their land into alfalfa by colonizing it and thus earning enough from wheat or flax in the first two or three years to pay all the expense of putting it into alfalfa, which the owners could not afford to do at once, and this system gives them a profit besides. On the other hand, many *estancieros* in the south and middle of the province of Buenos Aires are finding it so profitable to raise wheat that they are renting their land to colonists for wheat or are putting it in themselves, rather than use it for stock. In other parts of the same province they say that 1 to 1½ animals per square (4.17 acres) is the capacity of the native grasses. In the same place the estimate of the alfalfares is 3 animals per square for six to seven months out of the year, as in winter there is not much alfalfa to be had. In the province of Santa Fé the native camps vary widely, but in the southern part, which is best, the native grasses can be relied on in good seasons for about 1 to 1½ animals per square; but when the

dry cold season comes on, the cattle do not do well on this feed. Alfalfa in the same district will fatten 3 to 5 head per square in five to eight months, depending on the condition of the cattle when they reach the place, and the nature of the season—whether the alfalfa is in prime condition or needing rain. In the province of Buenos Aires, where they have alfalfa, it usually does not endure feeding well, except in certain exceptional parts. The native grasses are more relied upon, as they are much better there than in the upper provinces. In Córdoba and Santa Fé they are forced to put in alfalfa, as otherwise the camps would not be stocked, except with inferior criolla, or native, cattle.

As a general rule, in the majority of cases, little or no provision is made by estancieros against the usual annual dry season in the winter or for extreme droughts, and the cattle suffer accordingly. Of course, there are many exceptions to this improvidence, notably in the older and more valuable inside camps, and the success attained by the men who have taken the better care of their stock during the cold and dry seasons have done much to teach the necessity and profit of preparing to give stock dry feed during times of drought, and to finish steers on grain. Cheap, frozen, grass-fed beef will, of course, continue to be sold in England, but for export alive and for chilled beef of the best quality, alfalfa or the native grasses alone will not produce animals that will command high prices.

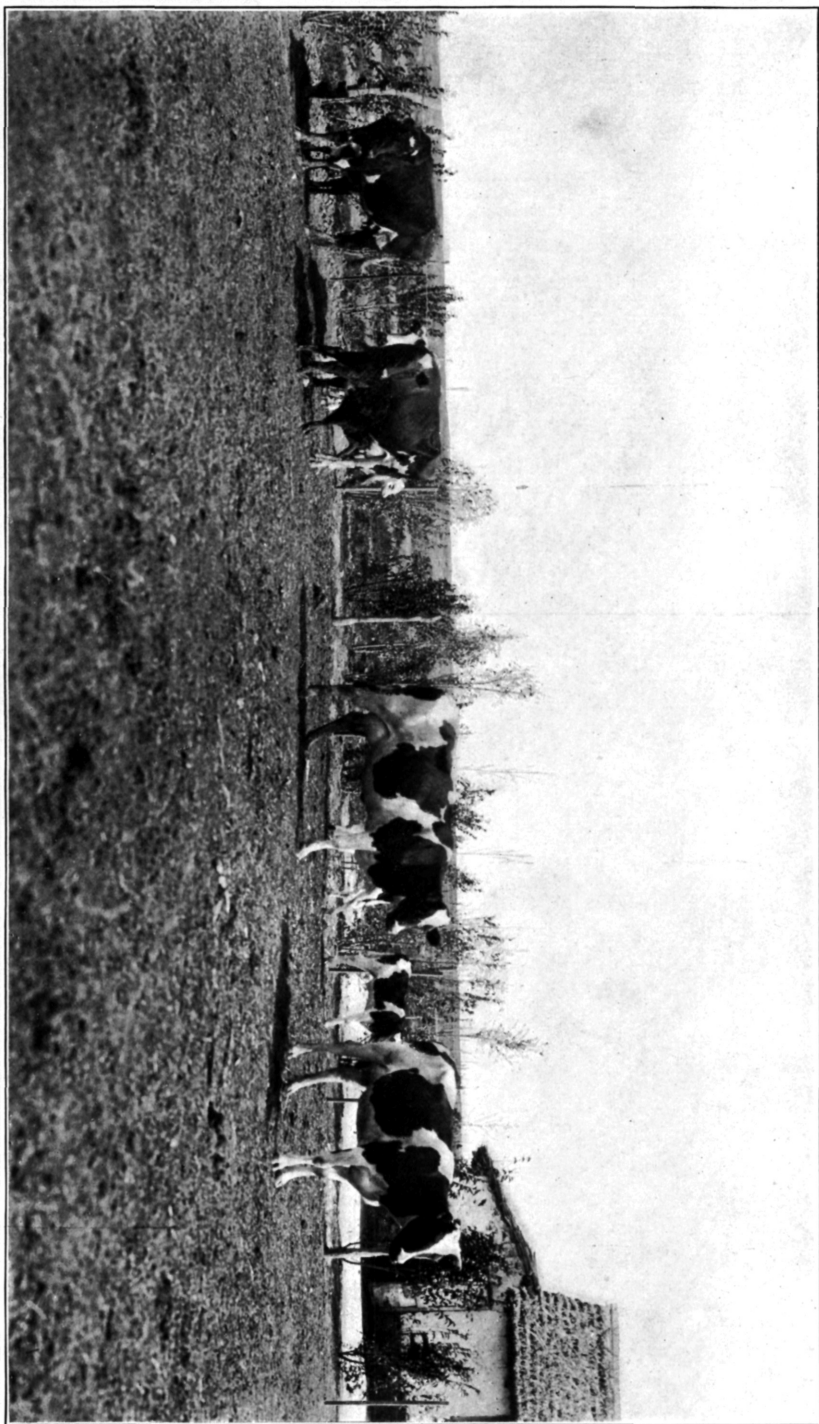
ADVICE OF AN ARGENTINE PACKER.

Mr. Daniel Kingsland, manager of the new chilled-meat works in La Plata, near Buenos Aires, has just issued a circular to estancieros giving them advice as to the best kind of animals to meet the demands of the chilled-meat trade. His suggestions have added importance from the fact that he is an old resident of the country, a producer of beef animals himself, and knows the conditions and possibilities of the country well. In his circular he says:

With regard to cattle, the export of beef in a refrigerated or chilled state to the United Kingdom is now an accomplished fact, but is still in its infancy, and places this country in the position of being the principal competitor of the United States of North America, which has hitherto enjoyed the whole of this trade. To compete with them successfully, it is our opinion that great care should be taken to produce bullocks which will always be worth more for this purpose and command a higher price than for any other. For chilling, it is not necessary to send extremely heavy-weight cattle. Bullocks of two and a half to three years old, well finished, and weighing from 550 to 620 kilos, or an average weight of 580 kilos (1,213 to 1,367 pounds, or an average of 1,278 pounds), will command the best prices. To produce this article from the average well-bred mestizo (graded animal), now plentiful, it does not matter whether the cross is Durham, Polled Angus, Hereford, Red Lincoln, or any other meat-producing strain, so long as the animals are always well fed and looked after in the winter season, when grass is scarce, or any other time when there should be a shortage of feed, never allowing the animals to become poor. This can be done by always growing a certain amount of alfalfa, corn, or other foods for winter



GRADE SHORTHORN BULLS, 2½ YEARS OLD, SECOND-PRIZE LOT. SOLD AT AN AVERAGE OF \$1,731.



HOLSTEIN COWS AND CALVES. PRIZE WINNERS IN THE DAIRY TEST.

feeding. By doing this estancieros will have no difficulty in producing the animals required all the year around, and the results will be satisfactory to themselves. The trouble and expense of cultivating a small proportion of their land in order to provide food for the winter and fattening stock in bad seasons will be well repaid.

Concerning the production of lambs for export, Mr. Kingsland says:

The production of lambs for export shows the greatest room for improvement, and should give good results to those who undertake to produce the suitable article. This can be done by introducing meat-producing strains of sheep into your flocks, such as Hampshire, Southdown, Oxford, Shropshire, and also Border Leicester rams, and, for the low camps, Romney Marsh rams. Then by winter feeding the ewes, enabling them always to have plenty of milk for their lambs, they would fatten at from five to seven months old to average 30 kilos (66 pounds) live weight, and would be worth 10s., or even more. Lambs intended for export should never be shorn, as it throws them back, and the wool obtained barely covers the cost of shearing. By producing lambs and selling them at this age, you are turning your capital every year, and therefore doubling your producing powers. The following facts will show you how far we are behind New Zealand, which country is our chief competitor in the frozen-sheep industry: The total number of sheep of all classes in New Zealand last year was about 20,000,000, and it exported nearly 4,000,000 of frozen sheep and lambs. At the same time we had 100,000,000 sheep in this country and our export was only 3,500,000. These figures speak for themselves, and should be an object lesson as to the possibilities in the production and early maturing of fat lambs; and it has also had the effect of increasing the value of, and extending the demand for, land suitable for the production of lambs to a very great extent. We would strongly advise estancieros to lay themselves out to prepare a certain number of lambs for export every year. The results must be of the most satisfactory nature to them and will increase the value of the flocks and camps all around.

LIVE STOCK CENSUS.

No one knows how many cattle there are in Argentina. Authorities disagree in their estimates, but it is now quite generally admitted that the estimates that have been given during the past two or three years are too high. The last regular live-stock census, taken in 1895, compared with the previous one, taken in 1888, is as follows:

Live-stock census of Argentina, 1888 and 1895.

Kind of animals.	1888.	1895.	Kind of animals.	1888.	1895.
CATTLE.	<i>Number.</i>	<i>Number.</i>	SHEEP.	<i>Number.</i>	<i>Number.</i>
Criollos (native).....	17,574,572	14,197,159	Criollos (native).....	24,322,214	17,938,061
Mestizos (graded).....	3,388,801	4,678,348	Mestizos (graded).....	42,002,871	56,106,187
Purebreds.....	37,858	72,216	Purebreds.....	381,012	335,314
Milch cows.....	960,426	1,800,799	Total.....	66,706,097	74,379,562
Oxen for service.....		953,004	Total live stock:		
Total.....	21,961,657	21,701,526	Cattle.....	21,961,657	21,701,526
HORSES.			Horses.....	4,234,032	4,446,859
Work horses.....	1,043,379	4,016,297	Sheep.....	66,706,097	74,379,562
Criollos (native).....	2,926,687		Pigs.....	393,758	652,766
Mestizos (graded).....	259,009	414,985	Asses and mules.....	417,494	483,369
Thoroughbreds.....	4,957	15,577	Goats.....	1,894,386	2,748,860
Total.....	4,234,032	4,446,859			

Statistics just published by the bureau of statistics of the department of agriculture, covering about three-fourths of the country, show that where in 1895 there were 16,256,363 cattle, there are now only 15,446,852, a decrease of 5 per cent. The correctness of these figures has been challenged, and the bureau of animal industry is arranging to take a census that will be more reliable. Still, it is well known that there is a much less number of cattle in some parts of the country, notably in the southwest and in the north. Droughts, overstocking, garra-pata ticks, foot-and-mouth disease, and anthrax have carried off many thousands. Cows have been sacrificed, thus interfering with the natural increase, until the Government is planning, as previously explained, to take steps to stop it. Younger animals are being sent to market also. The most conservative estimates do not place the total number of cattle in the country at more than 24,000,000, though it must be admitted that it is most difficult to arrive at a safe estimate or to find a sure basis to figure on.

Estimates on the number of sheep, based on the amount of the clip, on known conditions, careful reports from the sheep sections, and intimate knowledge of the business, vary from 80,000,000 to 115,000,000. It is probably fair to conclude that the real number is a little below an average between these two figures.

EXPORTATION OF LIVE STOCK.

*During January, February, March, and April, when the English ports were open to Argentine live stock, the number of animals exported was:

Exports of live stock from Argentina, January to April, 1903.

	Cattle.	Sheep.	Horses.	Mules.	Asses.
January and February (chiefly to England, South Africa, Brazil, and Spain) ^a	11, 926	48, 663	1, 234	7, 388	5, 597
March:					
To England	10, 319	29, 203	34	.....	.....
To South Africa	959	12, 880	150	74	20
To other countries ^b	264	3	27	.....	.....
Total	11, 542	42, 086	211	74	20
April	12, 877	44, 105	529	997	30

^a English ports open to Argentine live stock February 3 and closed May 9, 1903.

^b The actual totals for March from revised returns were: Cattle, 13,594; sheep, 47,931; horses, 626; mules, 89; asses, 30. Destinations are not given.

The average weight of the steers exported is given at 1,462 pounds.

Considerable complaint has been made by the exporters of live stock about the delays and expense of the inspection, disinfection, and fittings required by the Government for the exportation of live stock. But no doubt these will be overcome in time. The Government appears determined to use all possible precautions to prevent diseased

animals from being exported and to provide that the animals shall have such care on the voyage as that they shall arrive at their destination in good condition.

The results were not what had been expected, for various reasons. A great majority of the cattle that did not do well on the voyage were wild, untamed brutes. They were bruised and frightened in the railway cars coming to Buenos Aires. Arriving there, they were unaccustomed to such close quarters, did not know how to eat dry food, and, being hustled about and lifted on board in great cages high in the air, they were still more frightened. On board they knew still less how to adjust themselves to their new surroundings, failed to eat, were probably not so well cared for as they might have been, and some very heavy losses resulted. One ship was out twenty days longer than expected, and the animals had little to eat. Several lost from 20 to 30 per cent of the animals on board, and those that got through were in bad condition. The sales ran from £12 to £23 (\$58.32 to \$111.78 U. S.) in the English markets. Several cargoes were sold at £12 to £16 (\$58.32 to \$77.76 U. S.), which meant heavy losses. The animals cost in Argentina from £8 to £11 (\$40.88 to \$53.46 U. S.), generally about £10 (\$48.60 U. S.). The ocean freight was from £3 10s. to £4 10s. (\$16.91 to \$21.87 U. S.), the former being the lowest rate at the time the ports were closed (May 9). The rates for sheep were 6s. a head. Then there was the cost of feed and care besides, so that £18 (\$87.48 U. S.) was the lowest price that gave a profit. Rates to South Africa were £4 (\$19.44 U. S.) for cattle and 6s. (\$1.44 U. S.) for sheep. To Para, Brazil, where a small but regular trade in cattle has been worked up, the rate is £4 10s. (\$21.87 U. S.) per head. The ships used in the trade are not specially adapted to the business. There was lack of proper ventilation, the fittings were not always what they should have been, and, in fact, the business was just being learned and better ships were being offered when the foot-and-mouth outbreak put a stop to it for a time.

But the chief lesson learned by Argentines in their latest experiment with cattle exportation was that they must abandon their hopes of getting prices equal to those obtained for the prime corn-fed steers from the United States unless they also feed their animals grain to finish them for market. They also learned that a wild animal will not come off the range, take a railway journey, and go on shipboard and travel four weeks unless he has been prepared for it by taming and feeding before he leaves the estancia. So we may expect to see the Argentine estancieros begin within a year or two to put grain-fed steers on the market, but not in large numbers.

HEALTH OF LIVE STOCK.

Aside from the anthrax, which is still very bad in the province of Entre Rios and in certain parts of the province of Buenos Aires, and

the garrapata, or Texas fever ticks, which infest the northern provinces, the health of the cattle is good. The foot-and-mouth disease, referred to elsewhere, is regarded as a very small affair that will soon be ended so far as the better part of the country is concerned. The past season and the present one have been favorable to the health of cattle, except in a few places, where they have suffered from severe droughts. The Government is making a brave effort to confine the ticks to the warmer sections, where they are thickest, and to prohibit cattle from coming south beyond a certain point.

For many years cattle have been brought down from the Chaco and other parts of northern Argentina to be fattened on the rich camps of the provinces of southern Santa Fé, Córdoba, Entre Rios, and northern Buenos Aires. It has been a very good business, for the producers of stock cattle on these cheap northern camps could afford to sell their stock at very low prices. The cattle were immune from the fever, though carrying plenty of ticks. In this way some of the best stock regions were infested with ticks. But those who brought these cattle down, paying \$15 or \$20 for 2-year-olds, keeping them on grass for a year or so, and selling them at prices ranging from \$35 to \$60, strongly objected to having this business interfered with. The question was discussed for several years before the Government finally established a line and required the cattle crossing it coming south to be dipped. It was made compulsory to use a certain dip, and that was another source of controversy, the claim being made that other dips were equally good. But the Government authorities insist that their dip is the only one that will actually kill the ticks, while other dips simply cause them to drop off the animals. The establishment of this line affected the saladeros, or jerked-beef factories, the shipment of fat steers to Buenos Aires, and the bringing of steers down from the north to fatten. In the province of Entre Rios, where the saladeros are located, the movement of live stock furnished a large part of the provincial revenues, and its partial curtailment inflicted hardship on the provincial government. It is generally claimed that the official dipping stations are wholly inadequate. The animals are submerged one at a time in a cage let into the bath by a sort of derrick. It is impossible to dip more than 200 or 250 per day of these wild animals. All sorts of objections were and are still being raised. Besides, many stockmen regard the whole thing as nonsense and claim that the ticks do not carry the Texas fever. Several postponements of the taking effect of the decree were made, but it finally went into operation on April 1, 1903. During that month it was suspended, so far as Entre Rios was concerned, until July 31, under an agreement with the provincial government that it would cooperate with the Federal Government at the end of that time in putting it into full force. The provincial government is to erect enough dipping

stations to accommodate the demands. The Minister of Agriculture has just refused to further extend the time when dipping will be required.

THE SHEEP BUSINESS.

During the first six months of the year 1902, and in the latter part of 1901, the sheep business in Argentina was very discouraging and the Argentines, always quick to take up a promising new thing and just as quick to run from it when they strike a bad season, began to sell their sheep for nearly nothing. Sheep could be bought by thousands for \$1.50 to \$2 and many were sold for \$1 paper, or from 45 to 90 cents gold each. Various causes contributed to this, but the low prices of wool and mutton were the chief ones. The British ports were closed to live sheep and the freezing companies paid what they pleased for fat wethers and lambs—usually from \$4 to \$6 paper, rarely more than \$5.50. The best wools were selling at 15 to 20 per cent less than now. The home demand for mutton was not sufficient to make a price better than \$2 to \$4 in Buenos Aires. The coarse Lincoln wools especially were not in demand and were being shipped in great quantities to the United States for carpet manufacture. Now the markets are better for both wool and mutton and a change is coming over the Argentine flocks. This was one of the most striking features of the great annual show, and it points to conditions that offer to the sheep breeders of the United States an opportunity to make some sales of Rambouillet and Merino rams. Of the 1,718 sheep exhibited and offered for sale, 955 were Lincolns, but they did not, as heretofore, bring the highest prices or command the most interest. The Down breeds, the Rambouillets, and the Merinos were more sought after, in proportion to their numbers, and their numbers were greater than in any previous show. It will be noticed that the Lincolns stood third in the average price of sale, closely pressed by the Oxford Downs. The prices were not so high as in 1901, when the champion Rambouillet ram sold for \$7,300, and this year it sold for only \$2,000. But the highest priced Lincoln was only \$1,600. In a later sale in January a group of 4 Lincolns sold for an average of \$1,750, the highest price being \$2,300.

In this sale (January 21, 22, and 23) 383 rams, mostly shearlings, from 16 to 28 months old, were sold with the following results:

	Average price.
267 Lincoln rams, purebred	\$206.53
75 Lincoln, grades	46.13
41 Black-faced purebred rams	121.27

Highest and lowest prices of principal breeders.

Breed.	Owner.	Number sold.	Highest.	Lowest.	Average.
Lincolns.....	Puchuri & Co.....	4	\$2,300	\$1,300	\$1,750
	Mendiberri.....	5	770	340	474
	Espartillar.....	20	1,200	170	292
	Cec. Lopez.....	7	600	150	391
	Manuel José Cobo.....	4	500	320	380
	B. Gimenez Paz.....	8	480	170	243
Hampshires.....	Hector F. Casares.....		200	100	.....
Oxford Downs.....	Leonardo Pereyra.....		320	200	.....
Shropshires.....	.....		160	100	.....

With the exception of the Puchuri and Mendiberri lots, these were the second picking of the flocks, the best having been sent to the Palermo show the previous September. These two breeders did not exhibit at Palermo. With these exceptions the animals were, on the whole, inferior to those shown at Palermo, especially the Downs. The following is from the manager of the largest live-stock auction house, whose opportunities for studying the needs of Argentine breeders are unsurpassed:

In my opinion this year's tendency has been toward the Black-faced sheep, the Downs, a tendency which is likely to grow until the breed impresses itself upon the country over the Lincolns and Rambouillets, just as in former years the Lincolns imposed themselves against the Merino types. The reasons for this are early maturity, hardy constitution, quality of meat, and equal price for wool. These are the same conditions which in other times secured superiority for the Lincolns, a superiority which has commenced to vanish on account of the excess of production. I attribute this evolution of breeds less to a distinct superiority of any of them than to the influence—the inexorable law—of supply and demand upon production. Experience in breeding, combined with a clear insight into the special requirements of camp and climate for each of the improved breeds, will bring forward the good qualities they all possess.

The objection of the exporters to the big Lincoln, both on the hoof and as frozen mutton, has had a great influence upon the breeding of a better mutton, one that gives a smaller, firmer, leaner meat. The overproduction of the coarse Lincoln wool was the other strong influence, although this season there has been some improvement in the price of Lincoln cross wool. The opinion is quite general in the country that the breeding of Lincolns has gone too far, and that a better mutton and a finer wool must be produced. So the Downs, the Black-faces, are being sought for, especially the Oxford Downs, and also the Shropshires. The demand for Rambouillets is still strong. As it is now forbidden to bring rams or any other live stock from Germany or any other part of the Continent of Europe, and as the Merino types are again being sought after, it is plain that this is the time for our breeders to send their best animals to this country, just as they did

many years ago, when the first Merinos were brought to Argentina from Vermont.

Several hundred Lincoln rams have already been imported from England, and are being, or have been, sold at auction. The prices were very good, one lot of 20 rams and 10 lambs averaging \$908 each for the rams and \$302 for the lambs. Another lot of 6 averaged \$1,175; one sold for \$3,000. Ten ram lambs averaged \$237. Another lot of 4 averaged \$314. Among the arrivals from England were 54 Shropshire rams and 62 Shropshire ewes; also 15 Hampshire Down rams, upon order. This breed is quite extensively used in Argentina.

The Shropshires brought only about \$250 paper each at the first sale, and a second sale only \$100 to \$160. The demand was quickly supplied.

The freezing works pay a higher price per pound of dressed meat for the smaller, finer mutton sheep than for the coarse, large Lincolns, because the latter meet with objections in the English market, where for several years they have sold for a lower price than the smaller carcasses. One of the largest frozen-meat concerns in the country grades its lambs and muttons into the following five classes: No. 1, 34 to 39 pounds; No. 2, 40 to 48 pounds; No. 3, 49 to 56 pounds; No. 4, 57 to 64 pounds; No. 5, 65 to 72 pounds.

The 50 to 56 pound carcasses are preferred, so the sheep that will dress nearest to that weight and furnish a good quality of mutton is the one that commands the highest price. The opening of the English ports is, of course, emphasizing this preference for the smaller mutton sheep, creating a much larger demand for the wethers. This will encourage the breeders of the Downs, the Merino types, the sheep of smaller, finer carcasses and finer but lesser weight of wool. Still, the improvement in prices of Lincoln and Lincoln cross wools this year has encouraged the Lincoln breeders, already so greatly in the majority; and Lincoln rams are still in strong demand, as shown by the successful sales of those recently imported from England.

The sheep market in the suburbs of Buenos Aires is a great national institution, under private management and well directed. Here most of the sheep in the Republic are sold, although many are sold on the estancia, much the same as cattle—that is, the better class of export lambs and muttons. Prices vary greatly, according to the quality and weight of the animals, the amount of wool they carry, the demands of the market at the time of purchase, the distance from Buenos Aires, etc. All sheep are bought by the head, as are cattle.

The price of the export type of mutton sheep has been going up for several months, more noticeably since the opening of the English ports to Argentine live sheep. The top price now is \$12 per head for the best export wethers. The daily prices in the Buenos Aires mar-

ket range from \$6 to \$12 for fairly good animals, though many are sold for less. They are inferior animals, however. All the really good ones bring from \$8.50 to \$11.50. These prices are about double those of a year ago. The higher prices are for the product of well-known estancias, in large numbers, where the animals are more uniform and of exceptional quality. The prices vary from 11 to 16 cents paper per kilogram live weight, the average at this time being about 15 cents. This is equivalent to a range of \$2.18 to \$3.20, or an average of \$2.97 gold per 100 pounds. The distinction made by the frigorificos is that they pay more for the small sheep of fine mutton than would be warranted if size only was the consideration, as compared with the price paid for the big Lincolns. The latter, however, give a greater quantity of wool, and, though the mutton price in England is lower, there are more pounds to sell, so the man who raises it can afford to take a lower price per pound. For these reasons, although the Lincoln will stand less hardship than the smaller breeds, his champions in Argentina are not deserting him altogether.

THE EVOLUTION OF THE SHEEP-BREEDING INDUSTRY IN ARGENTINA.

There is no better authority on sheep breeding in Argentina than Mr. Herbert Gibson, vice-president of the National Rural Society. His father before him was a sheep-breeder there also, and his interests are chiefly concerned with sheep, as importer of purebred rams, breeder of breeding stock for this country, producer and purchaser of wool, and producer of mutton. A few years ago he published a book, "The History of the Sheep-breeding Industry in the Argentine Republic," and it is considered an authority to-day, except as subsequent developments have changed the conditions in the country. Mr. Gibson was most active and prominent in the introduction of the heavy, long-wooled Lincolns into the country twenty years ago, and urged the crossing of the Lincoln on the smaller Merino breeds for the double purpose of producing the greatest quantity of wool and mutton.

For these reasons importance must be attached to the recent publication of an article in the *Anales de la Sociedad Rural Argentina*, the official organ of the Argentine Rural Society, by Mr. Gibson, in which he distinctly modifies his views regarding the Lincoln breed. The fact that this article, written by the best-known writer on the sheep industry and one of the foremost advocates of the Lincoln, appeared in the chief agricultural and pastoral publication in the country, is the best evidence to be had of the great change that is now taking place in the sheep industry of Argentina. The article will be found to be of the deepest interest by all who in any way deal in mutton or wool, for it is based on long and thorough study and experience and is the verdict of a man completely convinced against his will, who

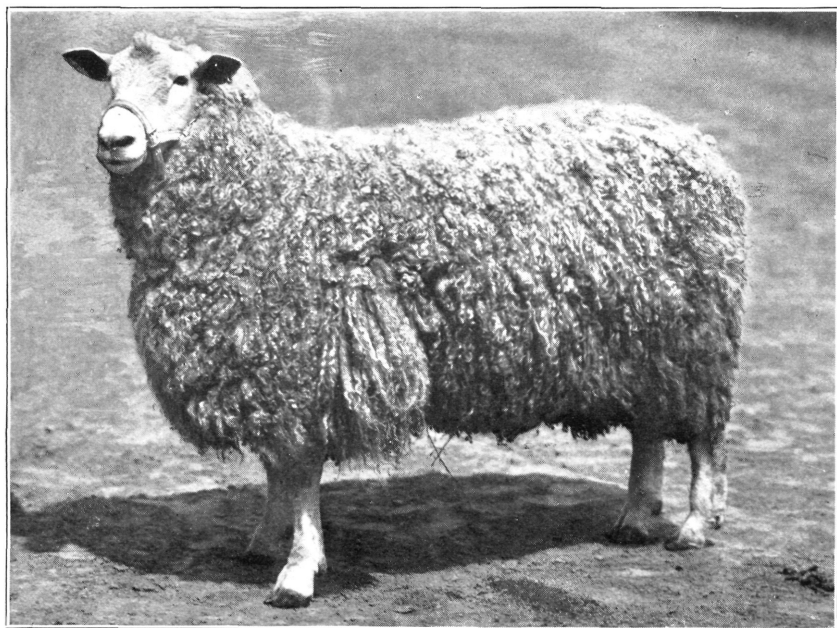


FIG. 1.—FIRST-PRIZE YEARLING LINCOLN SHEEP. SOLD FOR \$1,350.



FIG. 2 —FIRST-PRIZE HAMPSHIRE DOWN RAM.



SECOND-PRIZE RAMBOUILLETS, 18 MONTHS OLD. THREE SOLD AT \$530 AND ONE FOR \$2,000.



HAMPSHIRE DOWN RAMS, 3 MONTHS OLD. SOLD FOR \$150 EACH.

gives the reasons that have changed his opinions. The following is a translation of the article in its entirety:

The notable presence of the Down type in the recent exposition of the Rural Society shows a significant fact. The sheep industry of this country is about to enter upon a new evolution. The supremacy of the Lincoln race belongs to the history of the past. But it will not resign its empire without preserving the feudal titles which belong to it by right and tradition. Hence it is to be concluded that the Lincoln breeder who writes this, on welcoming his competitors, is not disposed in any way to quit the field.

After sixteen years of continuous demand for wool and carcasses of the Lincoln cross—every time less cross and more Lincoln—we find ourselves to-day with the British ports closed,^a the coarse wool despised, and our market limited to the demand—not very encouraging—of three freezing establishments. The time has therefore arrived to balance accounts with the sheep industry, and I now make some observations which this state of things will have suggested, without doubt, to more than one breeder.

First. The production of crossed wool, fine and middling, diminishes in my flocks. Every time there is more coarse wool. The more I try to mark my flock with the seal of the Lincoln the greater is the amount of wool "de padres" that my consignee rejects. What I mean is that the producer and consumer are going in opposite directions. When I think that my labor will be rewarded and exhibit a Lincoln flock typical and uniform, my consignee rewards me by sending my wool to make carpets in North America.

Second. It seems that it is not enough that my wool is valued in an order inverse to the refinement of my flock. The meat market acknowledges still less the merit of so many sacrifices. Even before the closing of the British ports the exporter talked to me about the mutton of the Lincoln type as being too pronounced, too large, too heavy. As soon as the demand was limited only to the market of the freezing establishments the diminution of value of the Lincoln mutton was more accentuated than ever. After twenty years of laborious progress I have seemingly achieved the result of producing a mutton whose only destiny is the grease tank.

Third. To these tribulations there is another to be added—that of the worm. It is noticeable that when you have succeeded in establishing a remarkable Lincoln type in the flock, that is the time this worm causes the greatest damage. There is a predisposition on the part of the yearling lambs to fall victims to *Ovine pasteurolosis* and to succumb to its effects. The spring brood experiences more and more every year a notable decrease during the dry and hot months of the following fall. Our afflicted shepherd will surely not find a ready and easy solution of the problem which confronts him; and if some of the causes that have contributed to this painful situation are marked out, it depends on the ability of each individual to apply them to his own case and to determine which modifications ought to be introduced.

The good prices obtained during the last decade for the wool and mutton of Lincoln cross have induced us to overstock our ranges with sheep. This was a great mistake. It is not enough that during certain periods of the year sheep are fat if at other times they are insufficiently fed. This overstocking has brought what the English call "dirty pasture," and consequently the scale of mortality increases.

The true Lincoln type has experienced a modification in this country, owing to the demand for size. Its fleece has lost the uniformity which characterized it twenty years ago. Its form has been exaggerated. The purity of the type has been somewhat sacrificed in order to obtain a large quantity of meat and volume of wool.

^a November, 1902.

Vigor and vitality—qualities necessary to transmit in their purity to the breed—have been sacrificed in this way.

A ram born and bred in the stable, artificially fed from its birth and forced to a precocious development, can not transmit to its descendants the qualities of robustness necessary to our system of sheep breeding. The English breeds do not owe their good reputation to measures taken against nature, nor have their typical qualities been produced in this way, and the practice in our breeding establishments, whose only object is a great development, is too artificial. It is true we ought not to neglect the breeding animals destined for the exposition, and we ought to feed them with the best fodder, keep their fleece in the best condition, and put into practice every legitimate art to present them in the most perfect way before the public. But it seems only reasonable, nevertheless, to allow them at least to breathe the pure air of the field and not the heavy atmosphere of a half-closed and half-dark stable, to oblige them to walk and to graze, and lastly to always keep in mind in preparing them that the breeder produces wool and meat in God's pastures and not in a factory lighted with electric light.

Passing over the causes why the Lincoln breed has not given all the results desired by its advocates, we come to another condition of our national flocks, to wit, their tendency toward unification. No one will deny the beneficial results of crossing the half-breed weak Merino with the robust Lincoln, to whose blood we are indebted for the improvement of form, the firm and healthy basis, and the rugged constitution which contribute to strengthen our sheep in the struggle against the open-air life and the climatic, topographic, and economical conditions of our system of sheep breeding. But the law of compensation is applied to stock breeding as well as to other industries. We ought not to seek either the one or the other extreme, but a medium. The demand of the market does not justify the production of an exaggerated specialty, because in order to obtain this specialty it is necessary to sacrifice certain qualities for the benefit of others, and sooner or later defects appear. In this respect the Lincoln breed has, or, to speak more correctly, had grown too popular.

The stock-breeding economy, as well as all others, is an unending history of ingrafting. The law of nature marks the step, always modifying, always molding, always surprising us with her evolutions, always reminding us while we painfully advance through the way of progress that man lives by the sweat of his brow and putting in our way obstacles which subdue our pride at the very moment when we thought we had reached the summit of our ideal. But, as she is also a good mother, she relieves our affliction by showing another way, until then unknown to us, by which she allows us to progress again, to advance, and to hope.

To ingraft, or, using breeding terms, to cross the typical features of the breeds that are crossed is a prime consideration. It is well known that consanguinity marks its procreation with all the characteristic conditions of the progenitors, be they good or bad, and that consanguinity has been the means employed by the breeder to reproduce the type he wished to perpetuate. In the crossing of the breeds, the greater the typical purity of the progenitor the greater is the perfection reached in the offspring. We start, then, if we intend to cross again, from a basis surer than the one of twenty years ago. The coarseness of the mixed Lincoln flocks of the country shows a condition more rational, more typical than the mixed Merino flocks showed then. We rely on the existence of a stock of rams of the Rambouillet, Lincoln, and Down breeds that will supply the demand for sires of excellent pedigrees. The national sheepfold is well equipped. There are elements to modify, in a satisfactory way, the existing sheep.

But outside the modest ability of the breeder who writes these lines, it surpasses the limits of an article to explain in detail the process through which our national flocks will approach more nearly to a profitable medium and to the balance of production, which is so evidently lacking. In the first place, we ought to realize better

the limitations to which we are subjected by the climatic and topographic conditions of the regions in which we raise our sheep. It is probable that the sheep breeder situated among the tender natural pastures of the South, in the climate of frequent and copious rains and damp atmosphere, whose flock of accentuated Lincoln type does not increase in the value of wool and meat, would find it advantageous to do what in New Zealand has given such satisfactory results, viz, to cross his Lincoln with Romney Marsh. The Kentish sheep contributes to impart smoothness, thickness, and to a certain extent fineness to the fleece of coarse Lincoln, while the meat of this crossing is in good demand, and a greater constitutional robustness is noticeable in the offspring.

The breeder with alfalfa pastures will never be a great sheep breeder. His rôle is in the cattle business. The development of the sheep industry on the alfalfa stock farms is incompatible with the production of fine wool, of whatever breed, either Merino, or Lincoln, or any other. The problem for the man with alfalfa has but a single economic side—to produce the best and greatest quantity of meat and to find out the type which will best answer this question only.

While the freezing establishments and the exporters of live sheep do not reward quality, paying for an animal of the Down cross a price greater than that paid for an animal of Lincoln cross, it is to be expected that the breeder will always prefer the animal of greater weight. But there are reasons for thinking that this will not always be so and that the Down breeds, crossed on the flocks of Lincoln origin, are destined to modify the general type of the flocks in the alfalfa regions.

In the outlying ranges of the Southwest—the zone of scanty rain and dry atmosphere, separated by long distances and expensive freights from the meat markets—the production of fine wool approximating to the Merino should be the first purpose of the breeder. The long wool of the English white-faces does not prosper there. The conditions of the climate favor the Merino breed. With the opening of a nearer meat market, with the improvement of the virgin range, and the planting of artificial pastures the meat production of that zone might become a more important factor than it is to-day. In this case the breeder will experience another process of evolution, seeking from among the meat breeds whose fleece is the most like the Merino—perhaps the Shropshire—a new cross which will make his flock a source of greater profit in the production of mixed products.

The Argentine breeder needs an increasing number of establishments in which the typical breeds of his specialty are produced. The pure, crossed, or mixed sire will disappear in time, to be replaced by the genuinely, genealogically, typically pure sire. The sheep breeder is called upon to produce, at a moderate price, for the wholesale sheep raiser a flock ram for the general flock, of a type and condition distinctly generic, who will not only give sons, but sons like himself. This will promote the union of the national flock, whose production will improve the more it approaches the medium of the distinctive qualities of each breed. But no breed, no crossing, will permanently contribute to the improvement of the flock if the breeder is not first imbued with the principles of economy. Before finding fault with the Rambouillet, or the Lincoln, or the Down, it will be well to think about the economic system of the farm. In our eagerness to produce much, and of the best, we have exacted more from the soil than the soil could give. The pastures have been overcharged with sheep; the richness of the soil has been exhausted, and the epidemics of worms and other like tribulations that persecute us are but the silent protest of nature, whose fertility has been prostituted.

A good friend of the Argentine Republic, the late John Nash, of good memory, importer of purebred animals, and one of the pioneer stockmen in the alfalfa region of the province of Santa Fé, used to say that half of the crossing of breeds in stock enters through the mouth. We are not yet ready to dispense with these rustic aphorisms of the old world. If we want to obtain better incomes, better fleeces,

better carcasses, we must not forget that the most classic ram in existence was not a beauty of Divine origin, but that he had once, in a period more or less remote, ancestors as vulgar, as inferior, as common as a bull of the wild herds from the Falkland Islands. There is no royal road to the perfection of cattle or sheep. We follow a path obstructed at every step by disappointments and unexpected obstacles. The improvement of the domestic breeds is a slow process which never reaches completion. We need not only intelligence and theory, but a continuous, indefatigable method adapted to the country—throwing now and then a glance toward the past—if we want to be able to say we progress.

ARGENTINE RESOURCES SHOWN BY EXPORTS.

The importance of Argentina as a food producer for other parts of the world across the sea is yearly coming to be better understood, as she sends more wheat, more corn, more beef, more mutton, and more butter nearly every year than the one before. And the Argentines and those from other lands who have been attracted to Argentina by the richness of the country and its boundless possibilities are getting a better understanding of their opportunities and how to make the best use of them. For the most part, however, the native Argentine, the descendant of the older families, prefers to confine his efforts to stock raising, agriculture, and politics, leaving the development of trade, of industries, and most commercial pursuits to foreigners. Naturally, the foreigners' profits in developing Argentine resources have been large. The freezing companies that send frozen beef and mutton to England, South Africa, and other markets have been earning 40 per cent dividends. There is a large margin in the butter business. Fortunes have been made in grain. But these conditions are not always to prevail, and, indeed, are changing already. There is a new generation in which there is much new blood, and these young men are ambitious to do more than raise stock and get into the provincial or national legislative bodies or hold some other official post.

Last year the Argentine energy in hunting markets was shown by the manner in which they went after the South African market. The Argentine department of agriculture rented a big transport from the navy department and sent several experimental cargoes to South Africa. They took mules, steers, horses, butter, alfalfa, wheat, oats, sheep, and many other things in small parcels on the owners' private account. It was all sold to good advantage, and convinced both ship-owners and producers that the market was worth working for. Now there are three regular shipping lines, with frequent sailings, and a good trade has sprung up. Some of the trade has not turned out so well as was hoped, but the experimental cargoes, sent at the lowest possible cost to shippers, have built up a trade that would not have been developed otherwise, and which is worth many thousands of dollars every month to the Argentine producers of food products, alfalfa, etc.

The British ports were closed to Argentine live stock during all the year 1902, and also in 1901, owing to the foot-and-mouth disease which was so severe in the year 1900. This had been the chief market for Argentine steers, wethers, and lambs. Notwithstanding this, the exports of live animals during 1902 amounted to \$5,617,696 gold, an increase of \$2,532,941 over 1901. Of this increase, \$1,033,800 was for mules, most of which went to South Africa. That was only a temporary business, for the trade is now back to its normal condition. In 1899 Argentina exported 312,150 steers, nearly all to England. Last year she sent 118,303 to various places, and this was nearly all new business, worked up in the last two years. It was 886 fewer than were exported in 1901, but the prices realized amounted to \$868,073 more in 1902. These cattle went to Spain, Portugal, South Africa, and Brazil. They were not equal to the best type of export steer that Argentina sent to England this year, but the business made better prices for a fair type of steer.

With the British ports open to the steers and sheep of Argentina, it is the ambition of every producer of steers and mutton sheep to raise animals that are fit to meet the demands of the export market. If he has rather bad luck at first in trying to compete with the United States, it only drives him to the improvement of his product to meet the conditions of the market in which the best prices prevail. That he will do this there is not the least doubt, for he has all the facilities for doing it. With cheap land, cheap labor, and a climate so favorable for the production of corn and other feed, and so kind to stock that they need no shelter the year around and are almost sure of abundant green feed during every month in the year, it will probably not be long before as good steers will be produced there as can be produced anywhere.

Gains are shown in the exports in nearly all important lines except wheat, flour, and wool. This year the corn crop will be almost double that of last year, and all the estimates of exports double the amount of last year, or nearly so. The wheat crop also will be very much heavier, probably double, as the crop of 1902 was far below the average. Wool exports this year are, up to the 1st of May, less than the same period last year, but the prices are much better. The year, in short, is a most prosperous one for the Republic. Crops generally have been good and prices are satisfactory. So are the prices for cattle and sheep, and the demand is putting the prices up a little more every week for good fat wethers, till now they are worth \$12 paper for the best.

The Argentine Government collected \$3,210,307 gold in export dues in 1902, of which all but \$29,850 was on animal products. The following export products are taxed 4 per cent on their gold valuation as fixed by the current market prices: Wool, all kinds of hides and skins,

horns, horsehair, tallow, animal and fish oil, bone ash, hide clippings, bones, hoofs, ostrich plumes. Old iron pays 5 per cent, and all other products are free.

PRINCIPAL EXPORTS FOR FIVE YEARS.

The following table shows the principal exports of animals and animal products from Argentina for the past five years. (Where tons are given metric tons of 2,204 pounds are understood.)

Exportation of principal products during the last five years.

Animals and animal products.	1898.	1899.	1900.	1901.	1902.
Steers.....number..	359,296	312,150	150,150	119,189	118,303
Wethers.....do....	577,813	543,458	198,102	25,746	122,501
Horses.....do....	14,360	7,259	32,969	9,761	16,008
Mules.....do....	10,205	7,740	13,179	20,468	54,928
Frozen beef.....tons..	5,867	9,079	24,590	44,904	70,018
Frozen mutton.....do....	59,834	56,627	56,412	63,013	80,073
Unwashed sheepskins.....do....	42,245	41,697	37,593	41,120	41,405
Salted cowhides.....do....	29,370	28,528	26,422	28,158	35,343
Dry cowhides.....do....	23,174	23,956	24,866	26,647	26,558
Salted horsehides.....do....	160,980	134,774	121,285	136,901	135,685
Dry horsehides.....do....	180,827	130,057	190,241	181,027	282,138
Wool.....do....	221,280	237,111	101,113	228,358	197,936
Jerked beef (tasajo).....do....	22,242	19,164	16,449	24,296	22,304
Various frozen meats.....do....	971	922	1,089	1,410	2,520
Canned beef.....do....	1,023	1,816	1,405	947	1,644
Tallow.....do....	29,341	24,150	24,837	33,368	49,095
Butter.....pounds..	2,042,562	2,600,317	2,327,506	3,329,338	9,093,975

EXPORTS IN DETAIL.

The animal exports of the Argentine Republic for the calendar year 1902, in quantity and value, compared with the previous year, ended December 31, 1901, are given herewith. All measurements have been reduced to those of the United States except tons, where the metric measurement has been left unchanged. The valuations are in Argentine gold, the dollar of which is worth 96.5 cents United States money.

Exports of animals and animal products during calendar year 1902 compared with 1901.

Animals and animal products.	Quantities.		Values.	
	Number or quantity in 1902.	More (+) or less (-) than in 1901.	Value in 1902.	More (+) or less (-) than in 1901.
Asses.....number..	14,223	+ 5,430	\$284,460	+ \$108,600
Cattle.....do....	118,303	- 886	2,848,445	+ 868,073
Goats.....do....	2	- 1	10	.....
Horses.....do....	16,008	+ 6,247	460,035	+ 227,560
Mules.....do....	54,928	+ 34,460	1,647,840	+1,033,800
Sheep.....do....	122,501	+ 96,755	368,656	+ 290,408
Hogs.....do....	532	+ 282	8,250	+ 4,500

Exports of animals and animal products during calendar year 1902 compared with 1901—
Continued.

Animals and animal products.	Quantities.		Values.	
	Number or quantity in 1902.	More (+) or less (—) than in 1901.	Value in 1902.	More (+) or less (—) than in 1901.
Horns.....tons..	2,475	+ 671	\$197,988	+ \$12,660
Frozen beef.....do....	70,018	+ 25,114	7,001,833	+2,511,386
Frozen mutton.....do....	80,073	+ 17,060	6,405,804	+1,354,781
Horse hair.....do....	2,651	+ 88	1,064,646	+ 59,969
Sheepskins.....do....	41,405	+ 285	8,487,078	+1,147,266
Salted cowhides.....do....	35,343	+ 7,185	6,384,955	+1,103,199
Dry cowhides.....do....	26,558	— 89	8,822,302	— 26,136
Wool.....do....	197,936	— 30,422	45,810,749	+1,144,266
Jerked meat (tasajo).....do....	22,304	— 1,992	2,647,450	— 232,005
Various frozen meats.....do....	2,520	+ 1,110	163,820	+ 72,172
Salted horsehides.....number..	135,685	— 1,216	406,794	+ 15,968
Dry horsehides.....do....	282,138	+101,111	460,906	+ 167,501
Goatskins.....pounds..	3,025,185	+116,050	823,328	+ 31,583
Kid skins.....do....	1,075,494	— 43,318	292,704	— 11,790
Pickled tongues.....do....	1,221,093	—274,887	166,164	— 37,409
Salted tongues.....do....	23,289	— 3,600	1,690	— 262
Pressed tallow.....do....	113,903	+101,467	3,617	+ 3,222
Canned beef.....tons..	1,644	+ 697	164,404	+ 69,687
Butter.....do....	4,125	+ 2,615	1,277,969	+1,100,424
Rendered fat and tallow.....do....	49,095	+ 15,727	6,209,038	+2,306,323
Sole leather.....number..	16,633	+ 14,662	83,165	+ 73,215
Tanned cowhides.....do....	134	— 286	268	— 572
Tanned sheepskins.....dozen..	140,914	+140,914	563,656	+ 563,656
Other tanned skins.....do....			417	— 205,221
Extract of beef.....pounds..	653,329	+175,382	592,696	+ 159,106
Cheese.....do....	14,374	+ 11,400	1,304	+ 1,034
Casein.....do....	207,395	+207,395	21,839	+ 21,839
Animal oil.....do....	381,859	+ 54,436	20,412	+ 5,182
Concentrated soup.....do....	86,480	— 32,692	11,769	— 2,448
Bone ash.....tons..	13,769	+ 9,332	94,865	+ 69,226
Clippings of hides.....do....	1,803	+ 430	41,637	+ 2,167
Guano.....do....	1,455	+ 639	36,385	+ 14,374
Bones.....do....	35,059	+ 7,557	341,732	+ 24,019
Hoofs.....do....	1,093	+ 344	13,660	+ 4,303
Dried blood.....do....	925	— 77	46,271	— 3,849
Salted tripe, sausage-casings, etc.....do....	2,189	+ 282	109,457	+ 14,101
Dried tripe, sausage casings, etc.....pounds..	286,353	+106,751	5,196	+ 1,937
Burned bones.....do....		— 50,000		— 5,000
Grease scraps.....do....	2,388,356	—127,082	54,166	— 2,883
Ostrich feathers.....do....	103,804	— 28,792	86,122	— 35,000
Eggs.....dozens..	4,798	+ 4,798	480	+ 480
Bristles.....pounds..	23,713	+ 23,713	430	+ 430
Chicken feathers.....do....	29,112	+ 6,845	660	+ 140

DISTRIBUTION OF EXPORTS.

The following table shows the distribution of the principal Argentine exports in 1902, as reported by the national statistical bureau. Giving only certain countries, the destination of a large part of certain articles is lost sight of. This is noticeable in the shipments of horses,

cattle, and sheep, most of which went to South Africa. Many ships sail from Argentine ports bound for St. Vincent "for orders," and they do not know until they reach that port where they will be ordered to take their cargo. The shipper has the two or three weeks that the ship requires to make the voyage to this point to determine where he will sell the cargo. Hence the Argentine port records never show where these cargoes were sold, but they are all for European or English ports.

Exports of animals and animal products, 1902, and their destination.

Country of import.	Cattle.	Horses.	Sheep.	Horse-hides.	Frozen beef.	Frozen mutton.	Jerked beef (tasaajo).	Wool.
	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>
Belgium		44		700			239	22,342
Brazil	28,923	1,205	3,550	100		3	13,841	5
France	103	191	500	1,000			191	86,007
Germany		59		313,707			12	49,750
Italy		4		19			3	1,905
Spain	1,124	141	1,452	849			68	
United Kingdom		383		100	54,402	70,371	451	11,216
United States				47,915			366	12,420
Uruguay	47,884	1,625	335	5,601			2,355	151
Other destinations	39,328	12,352	116,480	47,832	15,616	9,699	4,778	13,687
For orders	941	4	184					453
Total	118,303	16,008	122,501	417,823	70,018	80,073	22,304	197,936

Country of import.	Bones.	Salted cow-hides.	Dry cow-hides.	Sheep-skins.	Kid and goat skins.	Ostrich feathers.	Horse-hair.	Tallow.
	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>
Belgium	1,474	5,249	697	1,003	40,683	18,743	643	1,285
Brazil			4	54		441		2,067
France	956	2,127	450	23,829	1,426,050	33,766	51	3,709
Germany	3,388	13,308	1,021	2,299		1,429	167	1,828
Italy	1,426	167	2,523	2,693	3,527	908	429	6,024
Spain	121	316	2,915	16	20,192	8,331		4,961
United Kingdom	3,304	2,850	227	3,962	1,043		88	26,140
United States	14,009	4,086	11,990	20	1,374,436	24,339	424	254
Uruguay	983	1,725	2,945	519	3,005	2,498	397	189
Other destinations	5,305	4,552	3,786	7,010	1,231,743	13,349	452	2,638
For orders	4,093	963						
Total	35,059	35,343	26,558	41,405	4,100,679	103,804	2,651	49,095